



KUVEMPU UNIVERSITY

DEPARTMENT OF POST GRADUATE STUDIES AND RESEARCH IN
ENGLISH

JNANASAHYADRI, SHANKARAGHATTA – 577451

Prof Rachel Bari
Chairperson (BOS UG)

rachelbariwrc@gmail.com
cell: 9448244273

Ref/NO/KU/ENG/ 593 /2020-21

Date:17.11.2020

CIRCULAR

**FOR IMMEDIATE ATTENTION OF TEACHERS OF ENGLISH IN
THE UNDERGRADUATE COLLEGES AFFILIATED TO KUVEMPU
UNIVERSITY.**

The Covid- 19 situation in the country has brought in new challenges in the academic structure. We have had to adapt and re learn many things. Teaching has to take on a new approach as there is a delay in the commencement of classes. Confident that our teachers in the undergraduate classes are competent and willing to take up this new challenge, here are a few clarifications and information that they are requested to keep in mind before the academic year begins by the 17th of November 2020.

1. They syllabus is uploaded on the University website. Kindly access it as everything now is digital.
2. The textbooks are available in the bookstalls. The names of the textbooks are also available in the syllabus
3. There are two Workbooks from Orient Blackswan
 - a. Practising Language (Ist and 2nd Semester)
 - b. Practising communication skills (3rd and 4th semester)

The practice of allotting 5 marks for the workbook is withdrawn from this year. However the workbooks are to be treated as compulsory reference material for the writing skills section of the syllabus. The teachers are requested to supplement the exercises in the workbook with practice sessions of their own to make it effective.

The teachers of the respective colleges have to conduct two tests for a total of 20 marks each semester. **The marking scheme of the tests can be modified to suit practical applicability and marking requirements.**

Teachers are required to take note of the following:

The Textbook for the II year Bsc/BCA/BSc Int/BSc Home Science is titled INVENTIONS-II. The first poem in the syllabus which has been prescribed is Mother (translated by A K Ramanujan) by P Lankesh. But the translation used in the text is by Komalesh and not A K Ramanujan. Teachers are requested to download the translation by A K Ramanujan available on the internet and use it in class. Kindly acknowledge the translation of Komalesh in class, but use the translation of A K Ramanujan.

Wishing you all the best of luck in the year of the Covid-19 and hope we do justice to our students.

 17/11

RACHEL BARI
(Chairperson BOS UG)

CHAIRMAN
B.O.S. in English (UG)
Kuvempu Univ. SIKR
Jnaneswari
B.R. Project 577 11

Board of Studies in English (Undergraduate)
Kuvempu University

Revised and Approved Syllabus
Effective from 2020-21

Enhancing Language - I
I Year B.Com/ BBA/TTM
I Semester

Section- A

<u>Prose</u>	26 Marks	1 hr/wk
1. Not Just Oranges	: Isai Tobolsky	
2. The Luncheon	: Somerset Maugham	
3. What makes people unhappy?	: Bertrand Russell	
4. What is Science?	: George Orwell	
5. The Englishman and the Russian	: K.P.S Menon	

Section- B

<u>Poetry</u>	24 Marks	1 hr/wk
1. The Road Not Taken	: Robert Frost	
2. Chimney Sweeper (Songs of experience)	: William Blake	
3. A Request	: Kamala Das	
4. The Seven Ages of man	: William Shakespeare	
5. Go and catch a falling star	: John Donne	

Section – C

Language Skills and Grammar	30 Marks	2 hrs/wk
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(Work Book -Common for all 1st and 2nd semester courses)

Grammar:	1. Reading Comprehension	10 Marks
	2. Be, Do, Have forms	06 Marks
	3. Articles	02 Marks
	4. Tenses	04 Marks
	05. Subject Verb Agreement	04 Marks
	06. Dialogue Writing	04 Marks

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Kuvempu University
Revised and Approved Syllabus
Effective from 2020-21

I Year B.Com/ BBA/ TTM
II Semester

Section- A

Prose **26 Marks** **1 hr/wk**

- | | |
|---|-----------------------|
| 1. The Cabuliwallah | : Rabindranath Tagore |
| 2. Pret in The House | : Ruskin Bond |
| 3. Dangers of Drug Abuse | : Hardin B Jones |
| 4. Film Making | : Satyajit Ray |
| 5. Hagar : A Story of a Woman and Water | : Sara Joseph |

Section- B

Poetry **24 Marks** **1 hr/wk**

- | | |
|---------------------------------------|----------------------|
| 1 To Autumn | : John Keats |
| 2. She Dwelt among the Untrodden ways | : William Wordsworth |
| 3. Ozymandias | : P.B. Shelley |
| 4. The Patriot | : Nissim Ezekiel |
| 5. I Know why the Caged Bird Sings | : Maya Angelou |

Section- C

Language Skills and Grammar **30 Marks** **2 hrs/wk**

(Work book -Common for all 1st and 2nd semester courses)

- | | |
|--|----------|
| Grammar: 1. Reading Comprehension | 10 Marks |
| 2. Vocabulary | 04 Marks |
| 3. Interrogative Sentences | 02 Marks |
| 4. Voice – Active to Passive | 02 Marks |
| Passive to Active | 02 Marks |
| 05. Negative Sentences | 02 Marks |
| 06. Prepositions | 02 Marks |
| 07. Correction of sentences
(Verb forms only) | 02 Marks |
| 08. Dialogue Writing | 04 Marks |

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2018-19

Reading Room

I year BA/BSW

I Semester

Section - A

Prose: **26 Marks** **1 hr/wk**

1. Ransom of the Red Chief : O. Henry
2. The Open Window : Saki
3. Silent Spring : Rachel Carson
4. Issues in the Writing of Environmental History : Mahesh Rangarajan
5. The Happy Prince : Oscar Wilde

Section - B

Poetry: **24 Marks** **1 hr/wk**

1. Father Returning Home : Dilip Chitre
2. Africa : David Diop
3. Animals : Walt Whitman
4. Because I could not stop for Death : Emily Dickinson
5. Richard Cory : E.A. Robinson

Section- C

Grammar and Language Skills : **30 Marks** **2 hrs/wk**

(Work book -Common for all 1st and 2nd semester courses)

- Grammar:**
1. Reading Comprehension 10 Marks
 2. Vocabulary 04 Marks
 3. Interrogative Sentences 02 Marks
 4. Voice – Active to Passive 02 Marks
 - Passive to Active 02 Marks
 05. Negative Sentences 02 Marks
 06. Prepositions 02 Marks
 07. Correction of sentences 02 Marks
 - (Verb forms only)
 08. Dialogue Writing 04 Marks

Note: Existing question paper pattern to be followed

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2018-19

Reading Room

I year BA/BSW

II Semester

SECTION A

Prose: **26 Marks** **1 hr/wk**

1. Further Progress in Specialization : Stephen Leacock
2. The Need for Excellence : Narayana Murthy
3. The World Renowned Nose : Vaikom Muhammed Basheer
4. How Much Land Does a Man Need : Leo Tolstoy
5. **Maintaining Democracy** : **Ambedkar**

SECTION B

Poetry: **24 Marks** **1 hr/wk**

1. A Psalm of Life : Henry Wadsworth Longfellow
2. I Sit and Sew : Alice Dunbar Nelson
3. The Chimney Sweeper : William Blake
4. I Know My Soul : Claude Mckay
5. When in Disgrace : William Shakespeare

SECTION C

Language Skills and Grammar **30 Marks** **2 hrs/wk**

(Work book -Common for all 1st and 2nd semester courses)

- Grammar:**
1. Reading Comprehension 10 Marks
 2. Vocabulary 04 Marks
 3. Interrogative Sentences 02 Marks
 4. Voice – Active to Passive 02 Marks
 - Passive to Active 02 Marks
 05. Negative Sentences 02 Marks
 06. Prepositions 02 Marks
 07. Correction of sentences 02 Marks
 - (Verb forms only)
 08. Dialogue Writing 04 Marks

Note: Existing question paper pattern to be followed

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Pursuit of Language- II

II Year BA/BSW

III Semester

Section- A

Poetry

22 Marks

1 hr/wk

1. Aggression : Meena Kandaswamy
2. The Pulley : George Herbert
3. Mending Wall : Robert Frost
4. Crutches : Bertolt Brecht
5. Lake Isle of Innisfree : W.B Yeats

Section- B

Prose

28 Marks

1 hr/wk

1. My Brother, My Brother: Norah Burke
2. Yellow Fish : Ambai
3. The Chipko Women's Concept of Freedom : Vandana Shiva
4. My Thai Cat- Pratoomeratha Zeng
5. War: Luigi Pirandello

Section- C

Writing Skills :

30 marks

2 hrs/wk

1. Letter to the Principal : a) Conducting educational tour
b) Arranging a program in the college
6 marks
2. Paragraph writing - Proverbs or **ideas**
6 marks
3. Drafting Speeches
(Introduction of guest, welcome speech, Vote of thanks)
6 marks
4. Soft skills and interview skills
6 marks
5. Everyday expressions
6 marks

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Kuvempu University
Revised and Approved Syllabus
Effective from 2020-21

**II Year BA/BSW
IV Semester**

Section- A

Drama (Short Plays)

50 Marks

2 hrs/wk

1. The Pie and the Tart: Hugh Chesterman
2. Never, Never Nest: Cedric Mount
3. The Bear: Anton Chekov
4. Purpose: T.P. Kailasam

Section- B

Writing Skills

30 marks

2 hrs/wk

1. Application for a job with CV preparation 6 marks
2. Report writing on college events 6 marks
3. e-mail - enquiry and reply, placing an order, complaints 6x2 = 12 marks
4. Column writing on contemporary Themes 6 marks

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and approved syllabus

Effective from 2018-19

I year B.Sc./ BSc Int/B.C.A./B.Sc. Home Science

INNOVATION

I Semester

Section A

Prose: **26 Marks** **1 hr/wk**

- | | |
|--------------------------|------------------|
| 1. Gift of the Magi | : O. Henry |
| 2. Half a Rupee Worth | : R. K. Narayan |
| 3. The Model Millionaire | : Oscar Wilde |
| 4. All About a Dog | : A. G. Gardiner |
| 5. The Child | : Premchand |

SECTION B

Poetry: **24 marks** **1 hr/wk**

- | | |
|-----------------------------------|--------------------------------|
| 1. Where the Mind is Without Fear | : Rabindranath Tagore |
| 2. Daffodils | : William Wordsworth |
| 3. The Slave Auction | : Frances Ellen Watkins Harper |
| 4. A Noiseless Patient Spider | : Walt Whitman |
| 5. I felt a Funeral, in my Brain | : Emily Dickinson |

Section- C

Language Skills and Grammar **30 Marks** **2 hrs/wk**

(Work book -Common for all 1st and 2nd semester courses)

- | | |
|--|----------|
| Grammar: 1. Reading Comprehension | 10 Marks |
| 2. Vocabulary | 04 Marks |
| 3. Interrogative Sentences | 02 Marks |
| 4. Voice – Active to Passive | 02 Marks |
| Passive to Active | 02 Marks |
| 05. Negative Sentences | 02 Marks |
| 06. Prepositions | 02 Marks |
| 07. Correction of sentences
(Verb forms only) | 02 Marks |
| 08. Dialogue Writing | 04 Marks |

Note: Existing question paper pattern to be followed

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and approved syllabus

Effective from 2018-19

I year B.Sc./ BSc Int/B.C.A./B.Sc. Home Science

INNOVATION

II Semester

SECTION A

Prose: **26 marks** **1 hr/wk**

1. The Purloined Letter : Edgar Allan Poe
2. The Chipko Women's Concept of Freedom : Vandana Shiva
3. The Rise and Fall of the Bilingual Intellectual: Ramachandra Guha
4. The Eyes Are Not Here : Ruskin Bond
5. The World Renowned Nose : Vaikom Muhammad Basheer

SECTION B

Poetry: **24 Marks** **1 hr/wk**

- 1) Father Returning Home : Dilip Chitre
- 2) Search for My Tongue : Sujata Bhatt
- 3) Africa : David Diop
- 4) Ecology : A.K. Ramanujan
- 5) The Chimney Sweeper : William Blake

SECTION C

Language Skills and Grammar **30 Marks** **2 hrs/wk**

(Work book -Common for all 1st and 2nd semester courses)

- Grammar:**
1. Reading Comprehension 10 Marks
 2. Vocabulary 04 Marks
 3. Interrogative Sentences 02 Marks
 4. Voice – Active to Passive 02 Marks
 - Passive to Active 02 Marks
 05. Negative Sentences 02 Marks
 06. Prepositions 02 Marks
 07. Correction of sentences 02 Marks
 - (Verb forms only)
 08. Dialogue Writing 04 Marks

Note: Existing question paper pattern to be followed

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

INVENTIONS - II

II Year BSc/BCA/ B.Sc Int/ B.Sc Home science

III Semester

Section- A

Poetry

25 Marks 1 hr/wk

1. P. Lankesh : Mother (Translated by A.K Ramanujan)
2. John Milton : On his Blindness
3. William Wordsworth : The World is Too Much with us
4. Robert Frost : Birches
5. T.S Eliot : Journey of the Magi

Section- B

Prose

25 Marks 1 hr/wk

1. Oscar Wilde : An Exposure to Naturalism
2. George Orwell : Shooting an Elephant
3. Junior Pears Encyclopedia : Energy Crisis
4. A.K Ramanujan : Annaiah's Anthropology
5. K. Saraswathi Amma : Marriages are Made in Heaven

Section- C

Writing Skills :

30 marks 2 hrs/wk

1. Letter to the Principal : a. Conducting educational tour 6 marks
b. Arranging programme in the college
2. Paragraph writing - Proverbs or **ideas** 6 marks
3. Drafting Speeches 6 marks
(Introduction of guest, welcome speech, Vote of thanks)
4. Soft skills and interview skills 6 marks
5. Everyday expressions 6 marks

Note:

Existing question paper pattern to be followed for section A and B.

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

II Year BSc/BCA/ B.Sc Int/ B.Sc Home science

IV Semester

Section- A

Drama **50 Marks** **2 hrs/wk**

Othello by William Shakespeare

Section- B

Writing Skills **30 marks** **2 hrs/wk**

1. Application for a job with CV preparation 6 marks
2. Report writing on college events 6 marks
3. e-mail letters - enquiry and reply, placing an order, complaints 6x2 = 12 marks
4. Column writing on contemporary themes 6 marks

Question Paper Pattern

- Q. 1. Annotations : Three out of Five 3x5 =15
- Q. 2. Short notes : Three out of Five 3x5 =15
- Q. 3. Essay type answers Two out of Three 2x10 =20

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Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Enhancing Language - II

II Year B.Com/ BBA/ TTM

III Semester

Section- A

Poetry

20 Marks 1 hr/wk

1. The Tables Turned : William Wordsworth
2. Green : Kuvempu (K.V Puttappa)
3. On Killing a Tree : Gieve Patel
4. The Pulley : George Herbert
5. The Last Will of a Dalit Poet: Jayant Parmar

Section- B

Prose

20 Marks 1 hr/wk

1. Just One Word : Bama
2. The Lament : Anthon Chekov
3. Playing the English Gentleman : M.K Gandhi
4. The Worship of the Wealthy : G.K Chesterton
5. The Pot Maker : Temsula Ao

Section- C

Writing Skills

40 marks 2 hrs/wk

Business Communication

1. Application letter with Resume 6 Marks
2. Email - Enquiry and Reply, Placing an order, Complaint letters, Status Enquiry
6 x 2=12 Marks
3. Debt Collection letters 6 Marks
4. Request for OD facility and reply [favorable and unfavorable] 6 Marks
5. Circulars a) Change of Premises 6 Marks
b) Opening of a new branch
6. Computer and commercial terms 4 Marks

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Enhancing Language - II

II Year B.Com/ BBA/ TTM

IV Semester

Section- A

One Act Plays (4 Plays)

Marks: 50

2 hrs/wk

- a. The Refund :Fritz Karinthy
- b. The Dear Departed: Stanley Houghton
- c. Never, Never Nest : Cedric Mount
- d. The Burden : by T.P Kailasam.

Section B

Writing Skills and Soft Skills

Marks: 30

2 hrs/wk

- 1. Report writing - 05 Marks
- 2. Letter to the editor on civic problems - 05 Marks
- 3. Notice, agenda, minutes of a meeting - 05 Marks
- 4. Soft skills and Interview skills - 05 Marks
- 5. Summarizing a dialogue - 05 Marks
- 6. Everyday expressions - 05 Marks

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Syllabus for B.A. Programme in Linguistics

Paper – I: Language and Linguistics

UNIT I: Language and Communication: Human and animal communication, Design Feature Framework, Key Properties of Language. Definition of language; Characteristics of language. Theories regarding the origin of language.

UNIT II: Scope and nature of linguistics; Branches of linguistics; Concepts of Syntagmatic and Paradigmatic Relations; Synchronic and Diachronic relations; Competence and Performance; Innateness hypothesis; Langue and Parole. Language universals and specific properties of language

UNIT III: Levels of language and their hierarchy; phonological, morphological, syntactic and semantic. Language relation: genetic, areal, typological and morphological. Language: spoken language and written modes and relation between them; writing systems: evolution of writing systems

UNIT IV: Language variations: Dialect, Idiolect and Language; Dialect geography and isoglosses; Register, Style, Code, Sociolect; Pidgins and Creoles. Standardization of language: processes of standardization. Language as a system of communication: Communicative functions of language: Referential, Emotive, Conative, Poetic, Metalinguistic and Phatic functions of language; Semantics: Basic concepts.

Paper – II: Introduction to Phonetics

UNIT I: Basic concepts in Phonetics: The role of sound in communication; Major branches of Phonetics; The anatomy and physiology of speech: speech organs & their function; Major components of speech production: Initiation, Phonation, and Articulation; Classification and Description of speech sounds: consonants, vowels, diphthongs; Multiple articulation and Coarticulation; Suprasegmentals; Phonetic Transcription; Acoustic characteristics of speech.

UNIT II: Basic concepts in Phonology : Phoneme and its nature; Phonemic principles: the concepts of contrast, minimal pairs, complementary distribution; Types of distribution; Phonemic variation; Distinctive Feature Theory ; Syllabicity; Procedures for phonemic analysis; Rule writing ; Rule Ordering.

Paper – III: Approaches to Morphology and Syntax

UNIT I: Place of Morphology in Structural Linguistics and Generative Grammar; Interaction of Morphology with Phonology and Syntax. Concept of word; Kinds of word— Phonological, Orthographic and Grammatical word, lexeme and word form; hierarchical structure of word; word vs. morpheme.

UNIT II: Concept of morpheme, morph and allomorph; Relationship between morph and morpheme; Morphophonemics; Conditioning of allomorphs; Types of morph; Concept of underlying representation and rule ordering in Morphology.

UNIT III: Basic constituents of word structure—Root, Stem, Base, Affixes, Types of affixes; Inflectional vs. Derivational Morphology; Nature and classification of Inflectional and Derivational affixes; Exercises on morphological analysis.

UNIT IV: Basic concepts: IC analysis and its limitations; Generative Grammar; The Transformational framework: recursion, creativity, deep structure – surface structure, competence – performance, observational - descriptive – explanatory adequacy, components of a TG Grammar; Constituents: noun phrase and verb phrase constituents; Lexicon and Features, Simplicity and Linguistic Explanation.

UNIT V: Rules: phrase structure rules, transformational rules, segment structure rules, context free and context sensitive rules, optional and obligatory rules, singularly and generalized rules, meaning changing and meaning preserving rules, structural description and structural change, ordering of rules. Transformations: elementary transformational processes, phrase marker; A few transformations: passivization, reflexivization, extraposition, affix hopping, Do support.

Paper – IV: Introduction to Applied Linguistics

UNIT I: Introduction to language acquisition; linguistic environment and language acquisition.

UNIT II: Motivation and language acquisition; cross linguistic influences on language acquisition; theoretical models of language acquisition; intra/intercultural language differences and their impact on mainstream communicative competence,

UNIT III: Language acquisition and strategies for facilitating acquisition; normal and pathological language; the nature of deficits in disorders of language, speech, and hearing; intervention and rehabilitation.

UNIT IV: Language and Mind Language as biological behaviour, brain and language; language faculty and language acquisition, motherese; normal and pathological language.

Paper – V: Applied Translation and Communication

UNIT I: Nature and scope of translation: different theories of translation, use of linguistics in translation.

UNIT II: Principles of translation; role of the translator; types of translation, interpretation and transcreation; problems of translation

UNIT III: Text analysis; process of translation; methods of translation; problem areas in translation

UNIT IV: Language and Machine Computational linguistics and Natural language processing; parsing and generation, computer aided translation and language teaching.

UNIT V: Interpersonal and Intrapersonal communication; message structure and message rewriting; effective textual strategies: clarity, conciseness, consistency and coherence; content, style and persuasion; document summarization; report writing.

Paper – VI: Introduction to Sociolinguistics

UNIT I: Sociolinguistics - Definition, Concepts and Frameworks: defining sociolinguistics, subject matter of sociolinguistics, sociolinguistics and sociology of language, macro and micro sociolinguistics, traditional dialectology and social dialectology, defining speech community, verbal and speech repertoire, restricted and elaborated codes, verbal deficit hypothesis.

UNIT II: Multilingualism and language contact: bilinguals and bilingualism – typologies, bilingual speech community, domains of language use, code-switching and mixing, language maintenance, shift and death, pidgin and creole, lingua franca, language loyalty, attitudes towards bilingualism.

UNIT III: Linguistic Variation: types of variation: standard, non-standard, social, regional and stylistic, variables: marker, indicator and stereotype, sociolinguistic approaches to the study of stylistic variation in language, how language reflects and maintains social stratification, local factors: social network and communities of practice

UNIT IV: Sociolinguistics of Interaction: communicative competence: ethnography of speaking, power and solidarity, introduction to face theory, linguistic politeness, intercultural communication, pronouns of power and solidarity, address terms, communication accommodation, diaglossia.

Paper – VII: Language and Literature

UNIT I: Language and Literature The relation of language to literature; emotive versus scientific language; standard language versus poetic language; aesthetics, and poetics; language variation and styles of language use.

UNIT II: Basic concepts: notion of style and stylistics, nature and function of style, scope of stylistics, standard language vs. poetic language, speech vs. writing; basic parameters for stylistic analysis, stylistics and sociolinguistics, concept of macro- and micro-stylistics. Conceptual apparatus: registers and style, discursive vs. literary language, discourse and text grammars, code and message, structure and texture, signifier-signified-signification, coherence and cohesion, indeterminacy and ambiguity, deviation, foregrounding, and parallelism.

UNIT III: The study of discourse Speech acts Conversational implicature Approaches to pragmatics, Genre Analysis Critical discourse analysis Discourse and culture Applied discourse analysis

Paper – VIII: Language and Media

UNIT I: Linguistics and Media Language use in print media; language in advertising; language in TV and cinema; political discourse; language and empowerment

UNIT II: Media: The Semiotic Approach Sign systems, Components of the Sign, Verbal and Non-verbal Signs, Sequence of Linguistic Signs, Visual Signs, Denotation, Connotation and Myth, Myth and Social Meanings, Myth and Ideology.

UNIT III: The Advertising Business, Ideology in Ads, Ideology of Ads, The Semiotic Critique of Ads, Decoding Advertisements.

UNIT IV: Television Signs and Codes, Television Narrative and Ideology, Viewers' Involvement and positioning, Polysemic Television and Multiaccentuality.

UNIT V: Cinema Cinematic Semiosis: Film signs and codes, Film narrative, Film Genre, Cinema Spectatorship.

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

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Optional English

II Year BA

III Semester

Section- A

Literary Background

15 Marks 1 Hr/wk

Seventeenth and Eighteenth Century

1. Features of Metaphysical Poetry
2. Rise of the Novel- reasons for the rise of the Novel
3. Major Novelists
4. Development of Prose [Essays]
5. Neo-Classicism

Section- B

Literary Terms

15 Marks 1 Hr/wk

1. Tragedy
2. Three unities
3. Comedy
4. Essay
5. Soliloquy and Aside
6. Pun
7. Negative Capability
8. Narratology
9. Objective- Correlative
10. Metaphysical conceit
11. Paradox
12. Wit

Section- C

Poetry

30 Marks

2 Hrs/wk

1. William Shakespeare :
 1. Sonnet 94- They that have Power to Hurt
 2. No-16. Shall I Compare Thee
 3. No-104- To me Fair Friend you never can be Old
2. John Donne :
 1. Batter my Heart
 2. Canonization
 3. Sun Rising

3. Robert Herrick : 1. Of Love
2. To Daffodils
4. George Herbert : 1. The Pulley
2. The Collar
5. Andrew Marvel : To His Coy Mistress
6. John Milton : On Shakespeare

Section- D

Drama

20 Marks 2 Hrs/wk

Macbeth : William Shakespeare

Note: Existing question paper pattern to be followed

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

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Optional English

II Year BA

IV Semester

Section- A

Literary Background

15 Marks 1 Hr/wk

Romantic and Victorian Age

1. Features
2. French Revolution and its impact on Literature
3. Industrial Revolution and its impact on Literature
4. Victorian Temper
5. Victorian Prose

Section- B

Literary Terms

15 Marks 1 Hr/wk

1. Imagination and Fancy
2. Types of Novel : a) Picaresque
b) Historical
c) Adventure
3. Realism
4. Ideology
5. Class and Class structure
6. Neo- Classicism
7. Utilitarianism
8. Ode

Section- C

Poetry

30 Marks 2 Hrs/wk

1. William Blake : 1. The Tyger
2. Song: How Sweet I Roam'd from Field to Field
3. Sick Rose
2. William Wordsworth : 1. Tintern Abbey
2. Resolution and Independence
3. Coleridge : Kubla Khan
4. John Keats : Ode to a Nightingale
Ode to Autumn
5. P.B Shelley : Ozymandias

6. Alfred Lord Tennyson : 1. Ulysses
2. The Lotus Eaters
7. Robert Browning : The Lost leader
8. Mathew Arnold : Dover Beach

Section- D

Fiction

20 Marks 2 Hrs/wk

Wuthering Heights : Emily Bronte

Note: Existing question paper pattern to be followed

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Optional English

III Year BA

V Semester

Paper V: 20th Century Literature

Fiction-	George Orwell-1984	20 Marks	1hr
Drama-	Ibsen: A Doll's House	20 Marks	2hrs
Poetry:		40 Marks	2hrs
T.S Eliot:	1 The Love Song of J. Alfred Prufrock 2. Hollow Men		
W.B Yeats:	1. Second Coming 2. Sailing to Byzantium 3. An Irish Airman Foresees His Death		
Robert Frost:	1. Mending Wall 2. Stopping by Woods 3. Fire and Ice		
W.H. Auden:	1. In Memory of W.B. Yeats 2. Musee des Beaux Arts 3. Consider		
D. H. Lawrence:	1.Snake 2. Butterfly		
Maya Angelou:	1. Still I rise 2. Alone 3. Equality		

Ted Hughes: 1 The Thought-Fox

2. The Jug war

Sylvia Plath: 1.Lady Lazarus 2. Daddy

Suggested Reading:

- Bloom, Harold. *Modern Critical Interpretations: Poetry*. New York; Macmillan, 1998.
- Brooks, Cleanth. *Modern Poetry and Tradition*. London; Faber, 1939.
- Cox, James. *Twentieth Century Views on Robert Frost*. New York; Prentice Hall Pvt Ltd, 1960.
- Hall, James. *Permanence of W.B. Yeats*. London; Macmillan, 1950.
- Thomas C.T. *Twentieth Century Anglo American Poetry*. New Delhi; Macmillan, 1997.
- Williams, George. *Reader's Guide to T.S. Eliot*. New York; Syracuse University Press, 1998.

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Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Optional English

III Year BA

V Semester

Paper VI- World Literature

Drama: Three Penny Opera - Bertolt Brecht	20 Marks	2hrs
Fiction: The Fall- Albert Camus	20 Marks	1hr
Poetry:	40 Marks	2hrs

1. Bertolt Brecht - From a German War Primer

1. General, your tank is a power full vehicle
2. When it comes to marching many do not know
3. The war which is coming
4. Burning of Books

2. Pablo Neruda: 1. I do not love you

2. Enigma with flower

3 Chant to Bolivar

3. Anna Akhmatova : 1. I am not one those who left the land

2. Our Native Earth

3. The Guest

4. Gabriel Okara: 1. You Laughed and Laughed and Laughed

2. Snowflakes Sail Gently Down

5. Wole Soyinka: 1. Civilian and Soldier In the small house

6. Derek Walcott : 1. A Far Cry from Africa

Suggested Readings:

Williams, Raymond. *Drama: From Ibsen to Brecht*. London; Vintage, 1987.

Rajashekara G. Bertolt Brecht. Bengaluru, Abhinava, 2016.

Camus, Albert. *A Collection of Critical Essays*. Edited by Germaine Bee
London; Prentice- Hall, 1962.

Axthelm, Peter. *Modern Confessional Novel*. London; Yale University Press. 1967

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Optional English

III Year BA

VI Semester

Paper VII: Indian Writing in English

Fiction:	1 The Palace of Illusion - Chitra Banerjee Divakaruni	10 Marks	1hr
	2. Such a long journey -Rohinton Mistry	10 Marks	1hr
Poetry:		28 Marks	1hr

1. **Meena Kandaswamy:**
 1. Aggression
 2. Apologies of Living On
2. **Vaidehi:**
 1. Don't look into the Vanity bag
 2. Rasam
3. **P. Lankesh**
 1. Avva (Mother) (Trans. By Ramanujan A.K)
4. **Nissim Ezekiel:**
 1. The Night of the Scorpion
 2. Goodbye Party for Miss Pushpa T.S
 3. Patriot / Minority Poem
5. **N.K Hanumanthaiah:**
 1. Mother and Sari. (P.371)
 2. Elephants Melting In The Mouth of an Earthworm (P.374)
6. **Prathibha Nandakumar:**
 1. The Tigress
 2. The House wife

Short Stories:

16 Marks 1hr

Bharati Mukherjee - Nostalgia

Lalithambika Antharjanam - The Goddess of Revenge

Mahashweta Devi - The Hunt

Masti Venkatesh Iyengar- Curds Seller

Devanur Mahadeva- Amasa

Prose:

16 Marks 1hr

1. A.K Ramanujam - Three Hundred Ramayanas
2. Dr. B. R. Ambedkhar : Speech on Presenting Constitution of India
3. Savitri Bai Phule- 'A Forgotten Liberator' ed: by Braj Ranjan, Bamani & Pamela Sardar.
4. D. R. Nagaraj- Flaming Feet. The Chapter titled Gandhi and the Dalit Question: A Comparison with Marx and Ambedkar

Suggested Reading:

1. Joseph, Manganet Paul, "Jasmine on a String: A Survey of Women Writing in English Fiction in India. New Delhi; OUP 2014
2. King, Bruce. *Modern Indian Poetry in English*. New Delhi; OUP 1987.
3. Mehrotra, Arvind Krishna(ed). *A History of Indian Literature in English*. New York: Columbia University Press.
4. Nagaraj D.R. *Flaming Feet, Bangalore 1993*.
5. Naik M.K.: *A History of Indian English Literature*.
6. Ramanujan. A.K. *The Collecting essay of A.K.Ramanjun*. Penguin; New Delhi, 1991.
7. Satyanarayana K. and Susie ed.s Tharu. *Steel Nibs are sprouting* New Delhi, Harper Collins, 2013

Board of Studies in English (Undergraduate)

Kuvempu University

Revised and Approved Syllabus

Effective from 2020-21

Optional English

III Year BA

VI Semester

Paper VIII : Literary Theory

a. Literary Concept: 25Marks 2 hrs

1. Text and the Reader
2. Ideology
3. Hegemony
4. Subaltern
5. Hybridity
6. New Historicism
7. Popular Culture
8. Post Modernity
9. Sex and Gender
10. Patriarchy
11. Post Colonialism
12. Translation - Transcreation- Transliteration/Inter textuality

b. Critical Approaches: 45Marks 2hrs

- Feminism - 1. Cora Kaplan-Speaking/writing Feminism
2. Chandra Talpade Mohanty- Under Western Eyes-
Feminist Scholarship and Colonial Discourses
- New Criticism - Cleanth Brooks
- Post Colonialism - Ania Loomba - Selections

c. Practical Criticism - Close Reading of a Poem 10Marks 1hr

Suggested Reading:

- Berton, Hans. *Literary Theory: The Basics*. Routledge ; London, 2001.
- Culler, Jonathan. *Literary Theory: A Very Short Introduction*. OUP; New Delhi, 1997.
- Cuddon. J.A. *A Penguin Dictionary of Literary Terms and Theory*. New Delhi; Penguin, 2000.
- Eagleton, Terry. *Literary Theory: An Introduction*. London; Blackwell. 1996.
- Groden, Michael ed. *The John Hopkins Guide to Literary Theory and Criticism*: 2005.
- Habib M.A.R. *A History of Literary Criticism: From Plato to the Present*. OUP; London, 2001
- Loomba, Ania. *Colonialism/ Post Colonialism*. Routledge ; London, 1997.
- Nagarajan M.S., *English Literary Criticism and Theory*. Madras; Orient Black Swan, 2006.
- Raman, Selden. *A Reader's Guide to Contemporary Literary Theory*. London; Taylor & Francis Ltd. 1994.
- *The Bloomsbury Handbook to Literary and Cultural Theory*-2019.

English Language

Question Paper Pattern of the new syllabus for III Semester of BA/BSW (effective from 2020-21)

III Semester

Time 3:Hours

[Max. Marks : 80]

SECTION – A

(POETRY)

1. Annotate any TWO of the following : 2x 5 = 10
- a)
 - b)
 - c)
2. Write short notes on any ONE of the following in about a page : 1 x 4 = 04
- a)
 - b)
3. Answer any ONE of the following in about two pages: 1x8 = 8
- a)
 - b)
 - c)

SECTION – B (PROSE)

4. Write Short notes on any TWO of the following in a page each: 2 x 4 = 08
- a)
 - b)
 - c)
5. Answer any TWO of the following in about two pages: 2x10 = 20
- a)
 - b)
 - c)

SECTION – C

(WRITING SKILLS)

- | | |
|--|------------|
| 6. Letter to the Principal | 1 x 6 = 06 |
| 7. Paragraph writing (One out of three) | 1 x 6 = 06 |
| 8. Drafting Speeches : | 1 x 6 = 06 |
| 9. Soft skills and interview skills (Three out of Five) | 3x 2 = 06 |
| 10. Use any SIX everyday expressions in sentences of your own:
Six out of eight expressions given | 6 x 1 = 06 |

English Language

Question Paper Pattern of the new syllabus for IV Semester of BA/BSW (effective from 2020-21)

IV Semester

Time 3:Hours

[Max. Marks : 80]

SECTION – A

(DRAMA)

1. Annotate any THREE of the following : (Three Out of Five) 3 x 5 = 15
2. Write short notes on any THREE of the following in about a page each:
(Three Out of Five) 3 x 5 = 15
3. Answer any TWO of the following in about two pages each : (Two Out of Three) 2 x10 = 20

SECTION – B

(WRITING SKILLS)

4. a) Letter of application with C.V 6 Marks
- b) Writing a report on college programmes 6 Marks
- c) e-mail (Two out of Three) 2 x 6 = 12
- d) Column writing on contemporary issues (One Out of Three) 1 x 6 = 06

Third Semester B.Com/BBA/Question Paper Pattern
Enhancing Language – II
Effective from 2020-21

Time: 3Hrs

Max. Marks: 80

Section- A (Poetry)

1. Annotate any TWO of the following: (2 out of 3)

2x 4 = 08

- a)
- b)
- c)

2. Answer any TWO of the following in about a page and a half each. (2 out of 3) 2 x 6 = 12

- a)
- b)
- c)

SECTION – B (Prose)

3. Answer any TWO of the following in about two pages each. (2 out of 3)

2x8 = 16

- a)
- b)
- c)

4. Write Short notes on any ONE of the following. (1 out of 3)

1 x 4 =4

- a)
- b)
- c)

SECTION – C (Commercial Correspondence)

5. Answer any SIX of the following in about two pages each. (6 out of 8)

6x6 = 36

- a)
- b)
- c)
- d)
- e)
- f)
- g)
- h)

5. Explain the meaning of any FOUR commercial and computers terms in one or two sentences.

4x1=4

- | | | |
|----|----|----|
| a) | d) | g) |
| b) | e) | h) |
| c) | f) | |

Fourth Semester B.Com/BBA/Question Paper Pattern
Enhancing Language – II
Effective from 2020-21

Time: 3Hrs

Max. Marks: 80

Section- A (One Act Plays)

- 1. Annotate any THREE of the following : (3 out of 4) 3 x 5 = 15**
a)
b)
c)
- 2. Answer any THREE of the following in about a page and a half each.(3out of 4)3x10 = 30**
a)
b)
c)
- 3. Write a brief note on any ONE of the following. (1 out of 3) 1 x 5 = 05**

Section- B (Writing Skills)

4. a) Report writing 05
b) Letter to the editor 05
c) Notice, agenda, minutes of a meeting 05
5. Explain the meaning of any FIVE expressions in one or two sentences each.
(5 out of 7) 05
- | | | |
|----|----|----|
| a) | d) | g) |
| b) | e) | h) |
| c) | f) | |
6. Soft skills and Interview skills 05
7. Write a summary of the following dialogue 05

Optional English

**Question Paper Pattern of the new syllabus for V Semester BA
(effective from 2020-21)**

**QP CODE 10558-A V Semester
(SAE 440) Paper V—TWENTIETH CENTURY LITERATURE**

Time 3Hours

[Max Marks : 80]

SECTION – A

(POETRY)

1. Answer any THREE of the following (Three out of Five) 3 x 10= 30
2. Write short notes on any TWO of the following (Two out of Three) 2x 5 = 10

SECTION – B

(DRAMA)

3. Answer any ONE of the following (One out of Two) 1x10=10:
4. Answer any Two of the following: (Two out of Three) 2x 5 = 10

SECTION – C

(FICTION)

5. Answer any ONE of the following (One out of Two) 1x10=10:
6. Answer any Two of the following: (Two out of Three) 2x 5 = 10

Optional English

**Question Paper Pattern of the new syllabus for V Semester BA
(effective from 2020-21)**

**QP CODE 10559-A V Semester
(SAE 441) Paper VI— WORLD LITERATURE**

Time 3:Hours

[Max Marks : 80]

SECTION – A

(POETRY)

1. Answer any THREE of the following (Three out of Five) 3 x 10= 30

2. Write short notes on any TWO of the following (Two out of Three) 2x 5 = 10

SECTION – B

(DRAMA)

3. Answer any ONE of the following (One out of Two) 1x10=10:
4. Answer any Two of the following: (Two out of Three) 2x 5 = 10

SECTION – C

(FICTION)

5. Answer any ONE of the following (One Out of Two) 1x10=10:
6. Answer any Two of the following: (Two Out of Three) 2x 5 = 10

Optional English

**Question Paper Pattern of the new syllabus for VI Semester BA
(effective from 2020-21)**

**QP CODE 10658 -A VI Semester
(SAF 440) Paper VII— INDIAN WRITING IN ENGLISH AND
TRANSLATION
(Poetry, Short Stories and Fiction)**

Time 3Hours

[Max.Marks : 80]

SECTION – A

(POETRY)

1. Answer any TWO of the following (Two out of Four) 2 x 10= 20

2. Write short notes on any TWO of the following (Two out of Three) 2x 4 =08

SECTION – B

(FICTION)

3. Answer any ONE of the following (One Out of Two) 1x10=10:
4. Answer any ONE of the following (One Out of Two) 1x10=10:

SECTION – C

(SHORT STORIES)

5. Answer any TWO of the following (TWO out of Three) 2x8=16:

SECTION –D

(PROSE)

5. Answer any TWO of the following (TWO out of Three) 2x8=16:

Optional English

**Question Paper Pattern of the new syllabus for VI Semester BA
(effective from 2020-21)**

**QP CODE 10659 -A VI Semester
(SAF 441) Paper VIII— LITERARY THEORY
(Texts; LITERARY THEORY, CONCEPTS AND PRACTICAL
CRITICISM)**

Time 3Hours

[Max.Marks : 80]

1. Explain briefly any Five of the following concepts (Five out of Eight) 5 x 5= 25

- 2 Answer any Three of the following (Three out of Four) 3x 10= 30

- 3 Write short notes on any Three of the following (Three out of Five) 3x5=15

4. Attempt a critical analysis of any ONE of the following (One out of Two) 1x10=10

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸ್ನಾತಕ ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ
2016-17ನೇ ಸಾಲಿಗೆ ನಿಗದಿತವಾದ ಭಾಷಾ ಪದ್ಯಗಳು ಮತ್ತು ಬೃಹದ್ದ ಪಠ್ಯಗಳು- ಅಭ್ಯಾಸ ಭಾಗಗಳ ವಿವರ

೧. ಮೊದಲನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಎ/ಬಿ.ಕಾಂ/ಬಿ.ಎಸ್ಸಿ/ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ. (೨೦೧೪-೧೫ ರಿಂದ ೨೦೧೬-೧೭)
ಪಠ್ಯ : ನುಡಿ ಸಂಪದ-೧
ಸಂ: ಡಾ.ಡಿ.ಜಿ.ರಮೇಶ
ಡಾ. ಕುಂಸಿ ಉಮೇಶ
೨. ಎರಡನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಎ/ಬಿ.ಕಾಂ/ಬಿ.ಎಸ್ಸಿ/ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ. (೨೦೧೪-೧೫ ರಿಂದ ೨೦೧೬-೧೭)
ಪಠ್ಯ : ನುಡಿ ಸಂಪದ-೨
ಸಂ: ಡಾ.ಮಾರ್ಷಲ್ ಶರಾಂ
ಡಾ. ರಘುನಾಥ ಹೆಚ್.ಎಸ್.
೩. ಮೂರನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಎ/ಬಿ.ಎಸ್ಸಿ/ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ. (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೭-೧೮)
ಪಠ್ಯ : ನುಡಿ ಸಂಪದ-೩
ಸಂ: ಪ್ರೊ.ಡಿ.ಶಿವಲಿಂಗೇಗೌಡ
ಡಾ. ಅಣ್ಣಪ್ಪ ಎನ್. ಮಳೇವಳ್ಳಿ
೪. ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಎ/ಬಿ.ಎಸ್ಸಿ/ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ. (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೬-೧೭)
ಪಠ್ಯ : ನುಡಿ ಸಂಪದ-೪ ಸಂ: ಡಾ.ಹೆಚ್.ಟಿ.ಕೃಷ್ಣಮೂರ್ತಿ
ಸಂ: ಡಾ.ಪ್ರಕಾಶ ಮಧನ್

೫. ೫ ಮೂರನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಕಾಂ (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೭-೧೮)
ಪಠ್ಯ : ನುಡಿ ಸ್ಪಂದನ-೧
ಸಂ: ಡಾ.ವಿರೂಪಾಕ್ಷಪ್ಪ ಹೆಚ್.ಎಸ್.
ಪ್ರೊ.ಆರ್.ಕೆ.ವಿನಯ್

೬. ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಕಾಂ (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೭-೧೮)
ಪಠ್ಯ : ನುಡಿ ಸ್ಪಂದನ-೨ ಸಂ: ಪ್ರೊ.ಜಿ.ಎನ್.ಬಸವರಾಜಪ್ಪ
ಸಂ: ಪ್ರೊ.ಟಿ.ವಸಂತಕುಮಾರ್
ಡಾ.ಆಕುಂಡಿ ನಾಗರಾಜಪ್ಪ

೭. ಮೊದಲ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಬಿ.ಎ(ಬಿ.ಬಿ.ಎಂ.) (೨೦೧೪-೧೫ ರಿಂದ ೨೦೧೬-೧೭)
ಪಠ್ಯ : ನುಡಿ ಸವಿ-೧
ಸಂ: ಡಾ.ರಾಜೇಶ್ವರಿ ಹೆಚ್.
ಡಾ.ರಾಜೇಂದ್ರ.ಟಿ.

೮. ಎರಡನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಬಿ.ಎ(ಬಿ.ಬಿ.ಎಂ.) (೨೦೧೪-೧೫ ರಿಂದ ೨೦೧೬-೧೭)
ಪಠ್ಯ : ನುಡಿ ಸವಿ-೨
ಸಂ: ಡಾ.ಕೆ.ಆಂಜನಪ್ಪ
ಪ್ರೊ.ಜಿ.ಸಣ್ಣಹನುಮಪ್ಪ
ಡಾ.ಹಾಲಮ್ಮ.ಎಂ.

೯. ಮೂರನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಬಿ.ಎಂ. (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೭-೧೮)
ಪಠ್ಯ : ನುಡಿ ಸವಿ-೩
ಸಂ: ಡಾ.ಬಿ.ಜಿ.ಅಮೃತೇಶ್ವರ.
ಪ್ರೊ.ಬಿ.ಪಿ. ಮಹಾದೇವ

೧೦. ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ : ಬಿ.ಬಿ.ಎಂ. (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೭-೧೮)
ಪಠ್ಯ : ನುಡಿ ಸವಿ-೪ : ಸಂ: ಡಾ.ಚನ್ನೇಶ ಹೊನ್ನಾಳಿ

ಬಿಟ್ಟ ಕನ್ನಡ ಪಠ್ಯಗಳು - ಅಭ್ಯಾಸಭಾಗಗಳು

೧೧. ಮೊದಲನೇ ಸೆಮಿಸ್ಟರ್ - ಪಠ್ಯ : ಸಾಹಿತ್ಯ ಸಂಕಥನ -೧ (೨೦೧೪-೧೫ ರಿಂದ ೨೦೧೬-೧೭)
 ಸಂ: ಡಾ.ಬಿ.ಎಂ.ಜಯಶೀಲ
 ಡಾ.ಮೋಹನ ಚಂದ್ರಗುಪ್ತೆ
೧೨. ಎರಡನೇ ಸೆಮಿಸ್ಟರ್ - ಪಠ್ಯ : ಸಾಹಿತ್ಯ ಸಂಕಥನ -೨ (೨೦೧೪-೧೫ ರಿಂದ ೨೦೧೬-೧೭)
 ಸಂ: ಡಾ.ಬಿ.ಗಣಪತಿ
 ಡಾ.ಕೆ.ಶ್ರೀನಿವಾಸಿ
೧೩. ಮೂರನೇ ಸೆಮಿಸ್ಟರ್ - ಪಠ್ಯ : ಕನ್ನಡ ಸೊಲ್ಲರಿಮೆ-೧ (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೭-೧೮)
 ಸಂ: ಡಾ.ಶೈಲಜಾ ಹೊಸಳ್ಳೀರ
 ಡಾ.ಶುಭವರವಂತೆ.
೧೪. ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ - ಪಠ್ಯ : ಕನ್ನಡ ಸೊಲ್ಲರಿಮೆ-೧ (೨೦೧೫-೧೬ ರಿಂದ ೨೦೧೭-೧೮)
 ಸಂ: ಡಾ.ಹೆಚ್.ಟಿ.ಕೃಷ್ಣಮೂರ್ತಿ
 ಡಾ.ಎ.ಬಿ.ಉಮೇಶ
೧೫. ಐದನೇ ಸೆಮಿಸ್ಟರ್ -೧ ಪಠ್ಯ - ಸಾಹಿತ್ಯ ಸುಧೆ
 ಸಂ: ಡಾ.ಡಾ.ಚನ್ನೇಶ ಹೊನ್ನಾವಳ್ಳಿ (೩೦ ಅಂಕಗಳು)

ಪತ್ರಿಕೆ-೫ -- ೨. ಕನ್ನಡ ಛಂದಸ್ಸು - (೫೦ ಅಂಕಗಳು)
 (ಅಭ್ಯಾಸ ಭಾಗಗಳು)

೧. ಛಂದಸ್ಸು : ಅದರ ಬೆಳವಣಿಗೆಯ ಗುರುತುಗಳು : ಪ್ರಯೋಜನ (ಪ್ರವೇಶ , ಉಗಮ , ನಿಷ್ಪತ್ತಿ, ಸಾಮಾನ್ಯ ಸ್ವರೂಪ. ಪ್ರಯೋಜನ)
 (ಕನ್ನಡ ಛಂದ: ಸ್ವರೂಪ-೧ನೇ ಪುಟದಿಂದ ೧ನೇ ಪುಟ - ಟಿ.ವಿ. ವೆಂಕಟಾಚಲಶಾಸ್ತ್ರಿ
 ಕನ್ನಡ ಛಂದಸ್ಸಿನ ಚರಿತ್ರೆ - ೧ನೇ ಸಂಪುಟ - ೧ನೇ ಲೇಖನ ಗಮನಿಸಿ)
೨. ಗಣಸ್ವರೂಪ : ಮಾತೃ-ಲಘು-ಗುರು-ಘುತಗಳಗಳ ವಿಚಾರ- ಸಾಮಾನ್ಯಪರಿಚಯ
 ಅಕ್ಷರಗಣ/ಮಾತ್ರಾಗಣ/ಅಂಶಗಣಗಳ ಸ್ವರೂಪ ಪರಿಚಯ
 (ಕನ್ನಡ ಛಂದ: ಸ್ವರೂಪ. ಟಿ.ವಿ.ವೆಂಕಟಾಚಲಶಾಸ್ತ್ರಿ - ೧೨ ರಿಂದ ೨೩ನೇ ಪುಟ)
 ಕನ್ನಡ ಛಂದಸ್ಸಿನ ಚರಿತ್ರೆ - ಮೊದಲ ಸಂಪುಟ - ಪಿ.ಪಿ.ಕೆ.ಲೇಖನ - ಗಮನಿಸಿ)
೩. ಯತಿ- ಪ್ರಾಸಗಳ ಸಂಕ್ಷಿಪ್ತ ಪರಿಚಯ
 (ಕನ್ನಡ ಛಂದ: ಸ್ವರೂಪ. ಟಿ.ವಿ.ವೆಂಕಟಾಚಲಶಾಸ್ತ್ರಿ - ೪೭ ರಿಂದ ೬೯ನೇ ಪುಟ)
 ಕನ್ನಡ ಛಂದೋವಿಕಾಸ.ಡಿ.ಎಸ್.ಕರ್ಕಿ ಗಮನಿಸಿ. ಕನ್ನಡ ಛಂದದ ರಚನಾ - ಭಾಗ)
೪. ಅಕ್ಷರಗಣ: ಖ್ಯಾತ ಕರ್ನಾಟಕಗಳು
 (ಆರು ವೃತ್ತಗಳ ಪರಿಚಯ- ಲಕ್ಷಣ- ಲಕ್ಷ್ಯ-ಗಣವಿಭಾಗ)
೫. ಮಾತ್ರಾಗಣ-ಕಂದ-ಗರಳೆ -ಪಟ್ಟಿ
 (ಕಂದ ಪದ್ಯದ ಸ್ತೂಲ ಮತ್ತು ಸೂಕ್ಷ್ಮ ಪರಿಚಯ- ಲಕ್ಷ್ಯ- ಗಣವಿಭಾಗ
 ರಗಳೆ-ಲಲಿತ- ಮಂದಾನಿಲ
 (ಮೊದಲು ಅಂಶಪಟ್ಟಿ ಹೇಳಿ ನಂತರ ಆರು ಮಾತ್ರಾ ಪಟ್ಟಿಗಳ ಪರಿಚಯ
 ಶರ, ಕುಸುಮ, ಭಾವಿನಿ, ವಾರ್ಧಕ, ಪರಿವರ್ಧಿನಿ)
೬. ಅಂಶಗಣ: ತ್ರಿಪದಿ, ಸಾಂಗತ್ಯ, ಸಂಕ್ಷಿಪ್ತ ಪರಿಚಯ
 (ತ್ರಿಪದಿ: ಅಂಶಗಣತ್ರಿಪದಿ- ಮಾತ್ರಾಗಣತ್ರಿಪದಿ)
೭. ಹೊಸಗನ್ನಡ ಲಯಗಳ ಪರಿಚಯ
- | | |
|----------------------|----------------|
| ತಿನಂತ್ರೀ | ಡಿ.ಎಸ್.ಕರ್ಕಿ |
| ೧. ಮೂರು ಮಾತ್ರೆಯ ಲಯ | ಉತ್ಸಾಹಲಯ |
| ೨. ನಾಲ್ಕು ಮಾತ್ರೆಯ ಲಯ | ಮಂದಾನಿಲಲಯ |
| ೩. ಐದು ಮಾತ್ರೆಯ ಲಯ | ಲಲಿತಲಯ |
| ೪. ಆರು ಮಾತ್ರೆಯ ಲಯ | ಅಧಿಕೋತ್ಸಾಹ |
| ೫. ಏಳು ಮಾತ್ರೆಯ ಲಯ | ಭಾವಿನಿಲಯ |
| ೬. ಎಂಟು ಮಾತ್ರೆಯ ಲಯ | ಮಂದಾನಿಲ ಪ್ರಥೇದ |

೮. ಹೊಸಗನ್ನಡ ಛಂದಸ್ಸಿನ ವೈಶಿಷ್ಟ್ಯಗಳು
ಕಂಪಿತ, ಪದ್ಯಗಣ, ಮುಡಿ, ಸರಳರಗಳೆ, ಮಹಾಛಂದಸ್ಸು
ಐದನೇ ಸೆಮಿಸ್ಟರ್ - ಕನ್ನಡ ಭಾಷಾ ಚರಿತ್ರೆ
ಓನೇ ಪತ್ರಿಕೆ

- ಭಾಷೆಯ ಸ್ವರೂಪ, ಲಕ್ಷಣ ಮತ್ತು ಪ್ರಯೋಜನಗಳು
- ಭಾಷಾ ವರ್ಗೀಕರಣ
- ಭಾರತೀಯ ಭಾಷಾಪರಿವಾರಗಳು
- ಮೂಲದ್ರಾವಿಡ ಕಲ್ಪನೆ, ದ್ರಾವಿಡ ಭಾಷಾ ಲಕ್ಷಣಗಳು -
- ಪ್ರಮುಖ ದ್ರಾವಿಡ ಭಾಷೆಗಳ ಸ್ಥೂಲಪರಿಚಯ -
- ಕನ್ನಡ ಭಾಷೆಯ ಅವಸ್ಥಾ ಭೇದಗಳು
- ಕನ್ನಡ ಲಿಪಿಯ ವಿಕಾಸ
- ಉಪಭಾಷೆಗಳ ಉಗಮಕ್ಕೆ ಕಾರಣಗಳು
- ಕನ್ನಡದ ಉಪಭಾಷೆಗಳ ಮತ್ತು ಅವುಗಳ ಲಕ್ಷಣ
- ಭಾಷಾ ಬೆಳವಣಿಗೆ - ದೇಶ ಮತ್ತು ಅನ್ಯದೇಶ್ಯತೆಗಳು, ಭಾಷಾಸ್ವೀಕರಣ.

ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ
(ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ ಓನೇ ಸೆಮಿಸ್ಟರ್ ಐಚ್ಛಿಕ ಕನ್ನಡ)
ಪತ್ರಿಕೆ-----

ಪರಿವಿಡಿ:

ಪ್ರವೇಶ ಮೀಮಾಂಸೆ ವಿವರ

ಅಧ್ಯಾಯ ೧. ಸೃಜನಶೀಲ ಸೃಜನೇತರ ಪರಿಭಾಷೆಯ ವಿವರಣೆ:

- (೧) ಸೃಜನಶೀಲ ಸೃಜನೇತರ ರಹಮತ್ ತರೀಕೆರೆ
- (೨) ನಾನೇಕೆ ಬರೆಯುತ್ತೇನೆ? ಒ.ಲಂಕೇಶ
- (೩) ಮರಳಿಗೂಡಿಗೆ ಸೇರುವ ಹಕ್ಕಿಗಳು ಕಡಿಮೆ .ಕೆ.ಸತ್ಯನಾರಾಯಣ
- (೪) ನಾನೇಕೆ ಓದುತ್ತೇನೆ. ಎಂ.ಉಮಾದುಹೇಶ್ವರ.
- (೫) ಸೃಜನ ಶೀಲತೆಯ ಕೊರತೆಯೇ? ಟೀನಾ ಶಶಿಕಾಂತ್.

ಅಧ್ಯಾಯ ೨. (೧) ಕನ್ನಡ ಕಾವ್ಯ ಪರಂಪರೆ ಸಂಸ್ಕೃತ ಕಾವ್ಯ ಮೀಮಾಂಸೆ (ಸಂಬಂಧ ... ಸಂಘರ್ಷದ ನೆಲೆಗಳು)ಕಿ.ರಂ.ನಾಗರಾಜ.

(೨) ದ್ರಾವಿಡ ಕಾವ್ಯ ಮೀಮಾಂಸೆ, ತಮಿಳು ಕಾವ್ಯ ಮೀಮಾಂಸೆಚಿು ಮೂಲ ನೆಲೆಗಳು.

(ಪುಟ-೧-೨೩ ಅಧ್ಯಾಯ ೧) ಜ್ಯೋ ಕಾರ್ಲೋಸ್.

ಅಧ್ಯಾಯ -೩. ಅಲಂಕಾರ : ಪ್ರಾಸ; ಅನುಪ್ರಾಸ, ಆದಿ, ಅಂತ್ಯಪ್ರಾಸ, ಉಪಮೆ, ರೂಪಕ, ಪ್ರತಿಮೆ. (ಇವುಗಳ ಸ್ಥೂಲ ಪರಿಚಯ)

ಅಧ್ಯಾಯ-೪. ರೀತಿ: ಶೈಲಿ (Style)ರಚನೆ, ನಿರಚನೆ, ಬಂಧಮುಕ್ತ (ಕೂಸ್ಯತೆ)

ಅಧ್ಯಾಯ-೫ ಧ್ವನಿ: ಶಬ್ದಾರ್ಥ: ವರ್ಣ, ಶಬ್ದ, ವಾಕ್ಯ, ಪ್ರಬಂಧ, ಧ್ವನಿ.

ಅಧ್ಯಾಯ-೬ . ರಸ: ರಸ ಪ್ರವೇಶದ ಸ್ಥೂಲ ವಿವರಣೆ

ಅಧ್ಯಾಯ-೭ ಔಚಿತ್ಯ (ಪಾತ್ರ, ವಸ್ತು, ಶೈಲಿಯಲ್ಲಿ) ಕೂದ್ರ ತಪಸ್ಸು, ಕುವೆಂಪು - ಮಾಸ್ತಿ ನುಡಿ ಮಾರ್ಪುಡಿ.

ಅಧ್ಯಾಯ-೮. ಜನಪದ ಗೀತೆ, ಸಿ.ಪಿ.ಕೆ.

ಅಧ್ಯಾಯ-೯. ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯಕ್ಕೆ ಹೀಗೆ ಬನ್ನಿ. ಕೆ.ವಿ.ಸುಬ್ಬಣ್ಣ

ಅಧ್ಯಾಯ-೧೦. ಮಾಧ್ಯಮ ಮೀಮಾಂಸೆ: ನಾನು ಗಾಂಧಿ ಚಿತ್ರ ನೋಡಿದೆ ಅಥವಾ ಆಕಾಶಕ್ಕೆ ಎರಡು ಗೇಣು ಕಮ್ಮಿ. ದೇವನೂರು ಮಹಾದೇವ.

ಅಧ್ಯಾಯ- ೧೧. ಚಟುವಟಿಕೆ: ಸಂದರ್ಶನ ವ್ಯಕ್ತಿಚಿತ್ರ, ಲೇಖನ ಮೀಮಾಂಸೆ. (ಇವುಗಳ ತಯಾರಿ ಕುರಿತು ವಿವರ ನೀಡಬೇಕು)

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಬಿ.ಎ. ಪದವಿ ಆರನೆಯ ಸೆಮಿಸ್ಟರ್
ಕನ್ನಡ ಐಚ್ಛಿಕ ಪಠ್ಯ ಪತ್ರಿಕೆ -೭
(೨೦೧೬-೧೯)

ಪತ್ರಿಕೆ ಹೆಸರು : ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ

ಅಂಕಗಳು ೮೦+೨೦

ಬೋಧನಾ ಅವಧಿ : ವಾರಕ್ಕೆ ೫ ತಾಸುಗಳು

ಪಠ್ಯಕ್ರಮ

ಅಧ್ಯಾಯ ೧. ಕಾವ್ಯ ಮೀಮಾಂಸೆ:

ಅ.ಮೀಮಾಂಸೆಯ ಅರ್ಥ, ಸ್ವರೂಪ: ಮೀಮಾಂಸೆ ಮತ್ತು ವಿಮರ್ಶೆಯ ನಡುವಿನ ಸಂಬಂಧ

ಆ. ಕವಿ- ಕಾವ್ಯ- ಸೃಷ್ಟಿಯ

ಅಧ್ಯಾಯ ೨. ಅ. ಪ್ರತಿಭೆ, ವ್ಯಕ್ತಿತ್ವ

ಆ. ಸೃಜನಶೀಲ - ಸೃಜನೇತರ

ಅಧ್ಯಾಯ ೩. ಅಲಂಕಾರ:

ಅ. ಪ್ರಾಸ, ಅನುಪ್ರಾಸ, ಆದಿ- ಅನಿತ್ಯ ಪ್ರಾಸ

ಆ. ಉಪಮೆ - ರೂಪಕ- ಪ್ರತಿಮೆ

ಅಧ್ಯಾಯ ೪. ರೀತಿ- ಶೈಲಿ, ರಚನೆ - ಶೈಲಿ

ಅಧ್ಯಾಯ ೫. ಧ್ವನಿ :

ಅ. ಶಬ್ದಾರ್ಥ : ವಾಚ್ಯಾರ್ಥ, ಲಕ್ಷ್ಯಾರ್ಥ, ವ್ಯಂಗ್ಯಾರ್ಥ

ಆ. ಧ್ವನಿ ಸ್ವರೂಪ ಮತ್ತು ವಿಧಗಳು ಪ್ರಾಸಾದ ಧ್ವನಿ

(ವರ್ಣ ಧ್ವನಿ, ಪದಧ್ವನಿ, ವಾಕ್ಯ ಧ್ವನಿ)

ಅಧ್ಯಾಯ ೬. ರಸ: ಅರ್ಥ, ಸ್ವರೂಪ, ವಿಧಗಳು (ಸಂಕ್ಷಿಪ್ತ ವಿವರಣೆ)

ಅಧ್ಯಾಯ ೭. ಔಚಿತ್ಯ : ವಸ್ತು ಪಾತ್ರ , ವರ್ಣನೆ

ಅಧ್ಯಾಯ ೮. ಕನ್ನಡ ಮೀಮಾಂಸೆಯ ಅನನ್ಯತೆ:

ಅ. ಜಾನಪದ ಗೀತೆ ಆ. ಮಾಧ್ಯಮ

ಪರಾಮರ್ಶನ ಗ್ರಂಥ ಸೂಚಿ

೧. ಭಾರತೀಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ತೀ.ನಂ.ಶ್ರೀಕಂಠಯ್ಯ
೨. ಕಾವ್ಯಾರ್ಥ ಚಿಂತನ - ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
೩. ವಿಮರ್ಶೆಯ ಪೂರ್ವ ಪಶ್ಚಿಮ - ಜಿ.ಎಸ್.ಶಿವರುದ್ರಪ್ಪ
೪. ತೌಲನಿಕ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ಡಾ.ಹೆಚ್.ಅಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
೫. ನಾನೇಕಿ ಬರೆಯುತ್ತೇನೆ. : ಪಿ.ಲಂಕೇಶ್
(ಅಧ್ಯಾಯ ೧ ರಲ್ಲಿ ಕವಿ ಕುರಿತ ಚಿಂತನೆಗೆ ಬಳಸಿಕೊಳ್ಳುವುದು)
೬. ಸೃಜನಶೀಲ - ಸೃಜನೇತರ - (ತೀ) ರಹಮತ್ ತರಿಕೆರೆ ಅವರ ಲೇಖನ (ಅಧ್ಯಾಯ ೨ ಕ್ಕೆ)
೭. ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ - ಓ.ಎಲ್. ನಾಗಭೂಷಣಸ್ವಾಮಿ
೮. ತೊಂದು ಮೇವು ಕಂತೆ - ೧. ಕೆ.ವಿ. ನಾರಾಯಣ
(ರಚನೆ- ನಿರಚನೆ ಗೆ) ಪರಾಮರ್ಶಿಸುವುದು)
೯. "ಜಾನಪದ ಗೀತೆ" ಪಿ.ಪಿ.ಕೆ.
೧೦. ಮಾಧ್ಯಮ - ದೇವನೂರು ಮಹಾದೇವ ಅವರ 'ನಾನು ಗಾಂಧಿ ಸಿನಿಮಾ ನೋಡಿದ ಆಕಾಶಕ್ಕೆ ಮೂರೇಗೇಣು' ಲೇಖನವನ್ನು ಪರಮರ್ಶಿಸಬೇಕು.

ಹೆಚ್ಚಿನ ಪರಮರ್ಶನೆಗೆ

೦೧. ಕಪ್ಪಿಯಂಚಿನದಾರಿ - ರಹಮತ್ ತರಿಕೆರೆ
೦೨. ಜಾನಪದ ಮೀಮಾಂಸೆ - ವೀರಗ್ನಾ ದಂಡೆ
೦೩. ಕಾವ್ಯ ಕುತೂಹಲ - ಪು.ತಿ.ನ
೦೪. ಆಧುನಿಕ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ - ವ್ಯಾಸರಾಯ ಬಲ್ಲಾಳ
೦೫. ಭಾರತೀಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆಗೆ ಕನ್ನಡ ಕವಿಗಳ ಕೊಡುಗೆ- ಎಂ. ಸೀತಾರಾಮಯ್ಯ
೦೬. ವೈಷದಿಯ ತ್ರೀಮುಡಿ - ಡಾ.ಕೆ.ವಿ.ಪುಟ್ಟಪ್ಪ (ಕುವೆಂಪು)
೦೭. ರಸೋದ್ಯಮ: - ಕುವೆಂಪು
೦೮. ಕಾವ್ಯವಲೋಕನಂ - (ನಾಗವರ್ಮ ಕೃತಂ) - ಕನ್ನಡ ವಿ.ವಿ. ಹಂಪಿ
೦೯. ಸಾಹಿತ್ಯ ವಿರಾಟ್ ಸ್ವರೂಪ - ದ.ರಾ.ಬೇಂದ್ರೆ
೧೦. ಅಲ್ಲಮ ಮತ್ತು ಕೃವ ಪ್ರತಿಭೆ - ಡಿ.ಆರ್. ನಾಗರಾಜ

ಪಠ್ಯಕ್ರಮ

ಕನ್ನಡ ಐಚ್ಛಿಕ ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ ಪತ್ರಿಕೆ - ೮
ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ ಮತ್ತು ಅನ್ವಯಿಕ ವಿಮರ್ಶೆ

ಭಾಗ-೧

೧. ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ: ಪ್ರವೇಶ
(ವಿಮರ್ಶೆ ಎಂದರೇನು)
ವಿಮರ್ಶೆಯ ವ್ಯಾಖ್ಯಾನಗಳು ಹಾಗೂ ವಿಮರ್ಶೆಯ ಸ್ವರೂಪಗಳ ವಿವರಣೆ. ಪೂರಕ ಮಾಹಿತಿಗಾಗಿ ಲೇಖನ ಓದಿಸಿದೆ.
೨. ಕನ್ನಡ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ ಮತ್ತು ಕಾವ್ಯ ಮೀಮಾಂಸೆ: ಆಚಿತರ್ ಸಂಬಂಧಗಳು
(ರಸ ವಿಮರ್ಶೆ ಇತ್ಯಾದಿ, ಈ ಭಾಗದಲ್ಲಿ ಮುಖ್ಯವಾಗಿ ನವೋದಯ ವಿಮರ್ಶೆಯನ್ನು ಗಮನದಲ್ಲಿರಿಸಿಕೊಳ್ಳಬೇಕು. ಕೆಲವು ವಿವರಗಳನ್ನು ಹಾಗೂ ಲೇಖನಗಳನ್ನು ಇದಕ್ಕೆ ಪೂರಕವಾಗಿ ನೀಡಲಾಗಿದೆ.)
೩. ಕನ್ನಡ ವಿಮರ್ಶೆಯ ಮೇಲೆ ಪಾಶ್ಚಾತ್ಯ ತತ್ವಗಳ ಪ್ರಭಾವ.
(ಈ ಭಾಗದಲ್ಲಿ ಪ್ರಧಾನವಾಗಿ ನವ್ಯ ವಿಮರ್ಶೆಯನ್ನು ಗಮನದಲ್ಲಿರಿಸಿಕೊಳ್ಳಬೇಕು)
೪. ಕನ್ನಡ ವಿಮರ್ಶೆಯಲ್ಲಿ ಅನುಸಂಧಾನದ ಮಾದರಿಗಳು.
(ಈ ಭಾಗದಲ್ಲಿ ಮುಖ್ಯವಾಗಿ ಈ ಕೆಳಗಿನ ವಿಮರ್ಶಾ ಮಾದರಿಗಳನ್ನು ಗಮನಿಸಲಾಗುವುದು:
೧. ಸ್ವೀವಾದೀ ವಿಮರ್ಶೆ ೨. ಮಾರ್ಕ್ಸವಾದೀ ವಿಮರ್ಶೆ ೩. ದಲಿತ ಬಂಡಾಯ ವಿಮರ್ಶೆ ೪. ಸಾಂಸ್ಕೃತಿಕ ವಿಮರ್ಶೆ
೫. ಕನ್ನಡ ವಿಮರ್ಶೆಯ ಅನನ್ಯತೆಯ ಮಾದರಿಗಳು : ಈ ಭಾಗಕ್ಕೆ ನಿಗದಿ ಪಡಿಸಿರುವ ಪಠ್ಯಗಳು:
೧. ಹೊಸದಿಗಂತದೇಗೆ - ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ
೨. ಜಾನಪದ ಮತ್ತು ಆಧುನಿಕ ಸಾಹಿತ್ಯ - ಕೆ.ರಂ. ನಾಗರಾಜ

೩. ಪ್ರತಿ ಸಂಸ್ಕೃತಿ ಮತ್ತು ಪಾವಿತ್ರನಾಕ - ರಹಮತ್ ತರೀಕೆರೆ
(ಇದಲ್ಲದೆ ಪೂರಕ ಓದಿಗಾಗಿ ಕೆಲವು ಲೇಖನಗಳನ್ನು ನೀಡಲಾಗಿದೆ.)

ಭಾಗ- ೨ (ಆಸ್ಥೆಯಿಕ ವಿಮರ್ಶೆ)

ನಿಗದಿತ ಪಠ್ಯಗಳು

೧. ಓದಲಾಳ - ದೇವನೂರು ಮಹಾದೇವ
೨. ಕಲ್ಪಿ - ಕುವೆಂಪು

ಸಂ: ಡಾ.ಸುಬಿತಾ ಬನ್ನಾಡಿ
ಕನ್ನಡ ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು
ಸರ್.ಎಂ.ವಿ.ಕಾಲೇಜು, ಭದ್ರಾವತಿ

ಕೆಲವು ಪರಾಮರ್ಶನಗಳು

೧. ತತಮಾನದ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ - ಸಂ. ಎಚ್.ಎಸ್.ರಾಘವೇಂದ್ರರಾವ್, ಸಾಹಿತ್ಯ ಅಕಾಡೆಮಿ
೨. ಸುವರ್ಣ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ - ಸಂ. ದಂಡಪ್ಪ ಮತ್ತು ಸುಮಿತ್ರಾಬಾಯಿ, ಸಂಸ್ಕೃತಿ ಇಲಾಖೆ
೩. ಸಾಂಸ್ಕೃತಿಕ ವಿಮರ್ಶೆ - ರಹಮತ್ ತರೀಕೆರೆ
೪. ವಸಹತೋತ್ತರ ಚಿಂತನೆಗಳು - ಸಿ.ಎನ್.ರಾಮಚಂದ್ರನ್ - ಅಕಾಡೆಮಿ
೫. ಸಾಹಿತಿ, ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ - ಲಂಕೇಶ್ - (ಲಂಕೇಶ್ ಪತ್ರಿಕೆ) ಪ್ರಕಾಶನ
೬. ಸಂಸ್ಕೃತಿ ಕಥನ ಸಾಹಿತ್ಯ ಕಥನ, ಅಲ್ಲಮ ಪ್ರಭು ಮತ್ತು ಶೈವ ಪ್ರತಿಭೆ - ಡಿ.ಆರ್. ನಾಗರಾಜ್
೭. ಸದ್ಯದ ಹಂಗು - ರಾಜೇಂದ್ರ ಚೆನ್ನಿ
೮. ಕಿ.ರಂ.ನಾಗರಾಜ ಸಮಗ್ರ ಬರಹಗಳು - ಸಂ. ನಟರಾಜ ಹುಳಿಯಾರ್
೯. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ - ಸಿ.ಎನ್.ರಾಮಚಂದ್ರನ್ - ಅಕಾಡೆಮಿ
೧೦. ವಿಮರ್ಶೆಯ ಪೂರ್ವ ಪಶ್ಚಿಮ - ಜಿ.ಎಸ್.ಶಿವರುದ್ರಪ್ಪ
೧೧. ಬೇರು, ಕಾಂಡ, ಚಿಗುರು ತೊಂಡು ಮೇವು(೯ ಸಂಪುಟಗಳು) - ಕೆ.ವಿ. ನಾರಾಯಣ
೧೨. ಹಾಡೇ ಹಾದಿಯ ತೋರಿತು - ರಾಘವೇಂದ್ರರಾವ್
೧೩. ಭಾರತೀಯ ಸ್ತ್ರೀವಾದ - ಸಂ. ಮನು ಚಕ್ರವರ್ತಿ, ಆಕ್ಷರ ಪ್ರಕಾಶನ
೧೪. ಸ್ತ್ರೀವಾದಿ ಪ್ರವೇಶಿಕೆ - ಸುಮಿತ್ರಾಬಾಯಿ, ಎನ್. ಗಾಯತ್ರಿ
೧೫. ಸ್ತ್ರೀವಾದಿ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ - ತೇಜಸ್ವಿನಿ, ಸೀಮಂತಿನಿ ನಿರಂಜನ
೧೬. ಕರಾವಳಿ ಜಾನಪದ ಸಾಹಿತ್ಯ ಮತ್ತು ಸ್ತ್ರೀವಾದ - ಗಾಯತ್ರಿ ನಾವಡ

ಕುವಂಪು ವಿಶ್ವ ವಿದ್ಯಾನಿಲಯ,
ಕನ್ನಡ ಐಚ್ಛಿಕ ಪಠ್ಯಕ್ರಮ 2012-13ನೇ ವರ್ಷದಿಂದ

6ನೇ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ. ಕನ್ನಡ ಐಚ್ಛಿಕ (8ನೇ ಪತ್ರಿಕೆ)
ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ತತ್ವಗಳು ಮತ್ತು ಆನ್ವಯಿಕ ವಿಮರ್ಶೆ - 80 ಅಂಕಗಳು

ಭಾಗ-1 ವಿಮರ್ಶೆಯ ತತ್ವಗಳು 50 ಅಂಕಗಳು

1. ವಿಮರ್ಶೆ: ವಿಮರ್ಶೆಯ ಸ್ವರೂಪ ಮತ್ತು ಪ್ರಯೋಜನಗಳು,
ವಿಮರ್ಶಕನ ಅರ್ಹತೆಗಳು
2. ಸಮಾಜ ಕೇಂದ್ರಿತ ವಿಮರ್ಶೆ
ಮಾರ್ಕ್ಸವಾದಿ, ಸ್ಟ್ರೀವಾದಿ ವಿಮರ್ಶೆಗಳು
3. ಕೃತಿ ಕೇಂದ್ರಿತ, ಕರ್ತೃ ಕೇಂದ್ರಿತ, ವಾಚಕ ಕೇಂದ್ರಿತ ವಿಮರ್ಶೆಗಳು
4. ಕನ್ನಡ ವಿಮರ್ಶೆ
ನವೋದಯ ವಿಮರ್ಶೆ
ನವ್ಯ ವಿಮರ್ಶೆ
ದಲಿತ, ಬಂಡಾಯ ವಿಮರ್ಶೆ
ಸಂಸ್ಕೃತಿ ವಿಮರ್ಶೆ

ಆನ್ವಯಿಕ ವಿಮರ್ಶೆ - 30 ಅಂಕಗಳು

1. ಕಾವ್ಯ "ಸಖೀಗೀತ" - ದ.ರಾ.ಬೇಂದ್ರೆ (ಈ ಕೃತಿಯಲ್ಲಿ "ಸಖೀಗೀತ" ದೀರ್ಘಕವಿತೆ ಮಾತ್ರ ಪಠ್ಯವಾಗಿದೆ)
2. ಗೋವಿನ ಹಾಡು: ಜನಪದ
3. ಕಾದಂಬರಿ: ಸರಸಮ್ಮನ ಸಮಾಧಿ- ಶಿವರಾಮಕಾರಂತ

ಪರಾಮರ್ಶನ ಕೃತಿಗಳು:-

- | | | |
|--------------------------------|---|------------------------------------|
| 1. ಭುವನದ ಭಾಗ್ಯ | - | ಜಿ.ಎಸ್. ಅಮೂರ (ಸಖೀಗೀತ ಕೃತಿ ವಿಮರ್ಶೆ) |
| 2. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ | - | ಸಿ.ಎನ್.ರಾಮಚಂದ್ರನ್ |
| 3. ವಿಮರ್ಶೆಯ ಪೂರ್ವ ಪಶ್ಚಿಮ | - | ಜಿ.ಎಸ್.ಶಿವರುದ್ರಪ್ಪ |
| 4. ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ | - | ಓ.ಎಲ್. ನಾಗಭೂಷಣ ಸ್ವಾಮಿ |
| 5. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮೂಲತತ್ವಗಳು | - | ಡಾ.ಎಚ್.ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ |
| 6. ಸಾಂಸ್ಕೃತಿಕ ಅಧ್ಯಯನ | - | ರಹಮತ್ ತರೀಕೆರೆ |

29). ద్విదవ పనులకు - పాఠ్య - గద్యరచన - సం. దా. బి. గణాపతి

తెన్నత భండము

1. భండము దెంపి బిల్లువలోగియ గురుకులు : క్రమంగాలన
(ప్రవేశ, లగమ నిక్కచ్చి, పువలపుప్పూరువ క్రయాలు)
(తెన్నత భండము పురావ - 1 నీ క్రమముంద 8 నీ క్రమ - 13 వి వీరభాటల శాస్త్రీ
తెన్నత భండమున బరిత్ర - 11 నీ క్రమము - 11 నీ లోయ నమనీ)

2. గణాపతి : పాఠ్య - లగమ - గురు - ముత్యము విభాగ - పుష్పాన్వితము
శ్రీకృష్ణ గణాపతి / పాఠ్య గణాపతి / గోత గణాపతి వైరావ తలము

(తెన్నత భండము : పురావ - 13 వి వీరభాటల శాస్త్రీ - 13 లంబ 23 నీ క్రమ)
తెన్నత భండమున బరిత్ర - 11 నీ క్రమము - 11 నీ లోయ - నమనీ)

3. యతి - పాఠ్యము వంశీకృతములు

(తెన్నత భండము : పురావ - 13 వి వీరభాటల శాస్త్రీ - 47 లంబ 69 నీ క్రమ)
తెన్నత భండము విభాగ - 11 వి వీరభాటల శాస్త్రీ - తెన్నత భండము రహస్యము)

4. శ్రీకృష్ణ గణాపతి : పాఠ్యము కేవలములు

(తిరుమలముల తలము - లగమ - లగమ - గణాపతి)

5. పాఠ్యము - తల - లగమ - పాఠ్యము

(కలకాండ పాఠ్యము ముప్పై ముప్పై కలకాండము - లగమ - గణాపతి
లగమ - లగమ - ముప్పై)

(ముప్పై గోతములు గణాపతి నీ క్రమములో గణాపతి కలకాండములు
కలకాండము, గణాపతి, ముప్పై, తలమునీ)

6. గోతము : కృష్ణ, ముప్పై, ~~ముప్పై~~, ~~ముప్పై~~ - వంశీకృతములు
(కృష్ణ, గోతమునీ - పాఠ్య గణాపతి)

7. గణాపతి లగమ తలములు

<u>కృష్ణము</u>	<u>తలములు</u>
1. ముప్పై ముప్పై లగమ	ముప్పై
2. ముప్పై ముప్పై లగమ	ముప్పై
3. ముప్పై ముప్పై లగమ	ముప్పై
4. ముప్పై ముప్పై లగమ	ముప్పై
5. ముప్పై ముప్పై లగమ	ముప్పై

8. గణాపతి భండమున వ్రాసిన పాఠ్యములు :

తలము, కలకాండ, ముప్పై, ముప్పై ముప్పై

తెన్నెడి ఛందస్సు

1. ఛందస్సు : దేవత భక్తిచాననమును సులభముగా - (ప్రయోజనము) (ప్రవేశ, లగణము, నిశ్చయము, వాచనము, స్థిరము - ప్రయోజనము)
 తెన్నెడి ఛందస్సులు - 1 నీ ప్రకారము కనుక - 13 వేల వందలకావ్యము.
 తెన్నెడి ఛందస్సున జరిత్ర - గానములు - 1 నీ లోయ - గమనము)
2. గణనములు : సంకీర్ణ - లక్ష్య - గమన - స్థిరము, విభాగ - సంవత్సరములు.
 ఉత్తరగణ/సంకీర్ణగణ/దేశగణము స్థిరముల తరలము.
 (తెన్నెడి ఛందస్సులు - 13 వేల - 13000 కు 23 కు 13
 తెన్నెడి ఛందస్సున జరిత్ర - మూలములకు - 13 వేల - 13000 - గమనము)

3. రుచి - ప్రకారము సంకీర్ణములకు
 (తెన్నెడి ఛందస్సులు - 13 వేల - 47000 కు 69 కు 13
 తెన్నెడి ఛందస్సులు - 13 వేల - 69 వేల - గమనము - (తెన్నెడి ఛందస్సు - 13 వేల)

4. ఉత్తరగణ : భక్తి ప్రకారములు
 లోకములకు తరలము - లక్ష్య - లక్ష్య - గమనము

5. మాత్రగణ - తరల - రుచి - స్థిరము
 (తరల తరలము స్థిరములకు సంకీర్ణములకు - లక్ష్య - గమనము
 రుచి - లక్ష్య - మూలములు
 మూలములకు సంకీర్ణములకు సంకీర్ణములకు తరలము
 తరల, రుచి, మూలములు, మాత్రగణ, తరలములు.)

భాగము

6. దేశగణ : ప్రకారము, సంకీర్ణములకు, లక్ష్య ప్రకారము - సంకీర్ణములకు
 (ప్రకారము : దేశగణ ప్రకారము | దేశగణ ప్రకారము మాత్రగణ ప్రకారము.
 సంకీర్ణము - లక్ష్య - లక్ష్య - గమనము.

7. ఛందస్సులకు లక్ష్య - గమనము.
 సీత - లక్ష్య - దేశగణ/సంకీర్ణములు.
 (13 వేల కేరీ - ఛందస్సులకు - సీత మూలములకు
 ప్రకారము - మాత్రగణ - దేశగణ - సంకీర్ణములు.)

8. ఛందస్సులకు దేశగణ - మాత్రగణములకు ప్రకారములకు తరలము -

7. దేశగణములకు లక్ష్యములకు | లక్ష్యములకు ఛందస్సు - 13 వేల కేరీ

ఉచితము	ఉచితము	ఉచితము
1. మూలములకు లక్ష్యములకు	3.3.3.3	లక్ష్యములకు
2. సంకీర్ణములకు లక్ష్యములకు	4.4.4.4	మూలములకు
3. మూలములకు లక్ష్యములకు	5.5.5.5	లక్ష్యములకు
4. లక్ష్యములకు లక్ష్యములకు	6.6.6.6	దేశగణము
5. సంకీర్ణములకు లక్ష్యములకు	7.7.7.7	లక్ష్యములకు (3.4.3.4)
6. మూలములకు లక్ష్యములకు	8.8.8.8	మూలములకు ప్రకారము.

8. దేశగణములకు ఛందస్సులకు ప్రకారములు.
 రుచి, మూలము, మూలము, సంకీర్ణము, మూలములకు.

లక్ష్యములకు - తెన్నెడి ఛందస్సులు - 13 వేల వందలకావ్యము
 తెన్నెడి ఛందస్సులకు - 13 వేల కేరీ
 తెన్నెడి ఛందస్సులకు - 13 వేల కేరీ
 తెన్నెడి ఛందస్సులకు - 13 వేల కేరీ
 తెన్నెడి ఛందస్సులకు - 13 వేల కేరీ
 తెన్నెడి ఛందస్సులకు - 13 వేల కేరీ

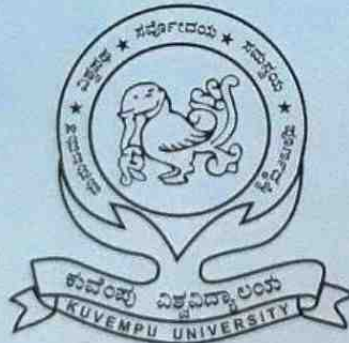
ಕನ್ನಡ ಪಠ್ಯಪುಸ್ತಕ ಮಾಲೆ

ಕನ್ನಡ ಭಂಡಸ್ತು

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಜಿ.ಎ. ಪದವಿಯ
ಐದನೇ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಐಚ್ಛಿಕ ಪಠ್ಯ

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಪ್ರೊ. ಕೆ. ಕೇಶವಶರ್ಮ

ಸಂಪಾದಕರು
ಡಾ. ಬಿ.ಎಂ. ಜಯಶೀಲ



ಪ್ರಸಾರಾಂಗ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ

೧. ಛಂದಸ್ಸಿನ ಉಗಮ, ನಿಷ್ಪತ್ತಿ, ಸಾಮಾನ್ಯ ಸ್ವರೂಪ ಮತ್ತು ಪ್ರಯೋಜನ. ೧
 ಕನ್ನಡ ಛಂದೋಗ್ರಂಥಗಳ ಕಿರು ಪರಿಚಯ: ಕವಿರಾಜಮಾರ್ಗ, ಛಂದೋಂಬುಧಿ, ಛಂದಸ್ಸಾರ.
೨. ಪದ್ಯ ಬಂಧದ ಸಾಮಾನ್ಯ ನಿಯಮಗಳು : ಪರಿಚಯಾತ್ಮಕ. ೫
 (೧) ಮಾತೆ, ಲಘು, ಗುರು, ಪ್ಲುತ.
 (೨) ಗಣಸ್ವರೂಪ - ವರ್ಣಗಣ, ಮಾತ್ರಾಗಣ, ಅಂಶಗಣ.
 (೩) ಲಯ, ಯತಿ, ಪ್ರಾಸ- ಆದಿಪ್ರಾಸ, ಅನುಪ್ರಾಸ, ಅಂತ್ಯಪ್ರಾಸ.
೩. ಖ್ಯಾತ ಕರ್ನಾಟಕಗಳು - ಚಂಪಕಮಾಲಾ ವೃತ್ತ, ಉತ್ಪಲಮಾಲಾ ವೃತ್ತ, ಮತ್ತೇಭ ವಿಕ್ರೀಡಿತ ವೃತ್ತ, ಶಾರ್ದೂಲ ವಿಕ್ರೀಡಿತ ವೃತ್ತ, ಸ್ಥೂರಾ ವೃತ್ತ, ಮಹಾಸ್ಥೂರಾ ವೃತ್ತ. ೧೨
 ಪಠ್ಯ: ಪಂಪನ ವಿಕ್ರಮಾರ್ಜುನ ವಿಜಯ ಕಾವ್ಯ - 'ದುರ್ಯೋಧನಂ ನಿನ್ನನೇತಱಿಱಿ ನಂಬಿದನೆಂದೊಡೆ.....'
೪. ಕಂದ : ಉಗಮ, ನಿಷ್ಪತ್ತಿ, ಲಕ್ಷಣ, ಇತಿಹಾಸ ಪ್ರಾಮುಖ್ಯತೆ. ೨೫
 ಪಠ್ಯ - ಜನ್ನನ ಯಶೋಧರ ಚರಿತೆ ಕಾವ್ಯ - 'ಒಲವಾದೊಡೆ ರೂಪಿನ ಕೋಟಲೆಯೇವುದೊ.....'
೫. ರಗಳೆ : ನಿಷ್ಪತ್ತಿ, ಲಕ್ಷಣ, ಪ್ರಕಾರ, ಇತಿಹಾಸ ಪ್ರಾಮುಖ್ಯತೆ. ೩೦
 ಉತ್ಸಾಹ ರಗಳೆ, ಮಂದಾನಿಲ ರಗಳೆ, ಲಲಿತ ರಗಳೆ.
 ಪಠ್ಯ : ಹರಿಹರನ ಮಾದಾರ ಚೆನ್ನಯ್ಯನ ರಗಳೆ - 'ದೇವದೇವನೊಲ್ಲನ ಕುಲಂ ಸತ್ಕುಲಂ.....'

೬. ಷಟ್ಪದಿ : ಮೂಲ ಷಟ್ಪದಿ / ಅಂಶಷಟ್ಪದಿ. ೪೩
 ಮಾತ್ರಾ ಷಟ್ಪದಿ : ಶರ, ಕುಸುಮ, ಭೋಗ, ಪರಿವರ್ಧಿನಿ,
 ಭಾಮಿನಿ, ವಾರ್ಧಕ.
 ಪಠ್ಯ : ಕುಮಾರವ್ಯಾಸನ ಕರ್ಣಾಟಕ ಭಾರತ ಕಥಾಮಂಜರಿ -
 'ಲೋಕದ ಜೀವಿಗಳಿಗಿರುವ ಗುರುಗಳು....'
 ಪಠ್ಯ : ರಾಘವಾಂಕನ ಹರಿಶ್ಚಂದ್ರ ಕಾವ್ಯ - 'ಹೊನ್ನಿಲ್ಲ
 ಧನಿಕರಾದೊಡಂ.....'
೭. ತ್ರಿಪದಿ : ಉಗಮ, ಇತಿಹಾಸ, ಮಹತ್ವ, ಅಂಶಗಣಾತ್ಮಕ ಮತ್ತು ೬೧
 ಮಾತ್ರಾಗಣಾತ್ಮಕ ತ್ರಿಪದಿ
 ಪಠ್ಯ -
 (೧) ಜನಪದ ತ್ರಿಪದಿ
 (೨) ಸರ್ವಜ್ಞನ ತ್ರಿಪದಿ
೮. ಸಾಂಗತ್ಯ : ನಿಷ್ಪತ್ತಿ, ಉಗಮ, ಇತಿಹಾಸ ಮಹತ್ವ, ೬೨
 ಪಠ್ಯ - ರತ್ನಾಕರವರ್ಣಿಯ ಭರತೇಶವೈಭವ -
 'ಅರಗಿಳಿಯಾಳಾಪ.....'
೯. ಅಕ್ಕರಗಳು : ಪಿರಿಯಕ್ಕರ ೭೧
೧೦. ಹೊಸಗನ್ನಡ ಛಂದಸ್ಸು - ೭೩
 (೧) ವಿಭಿನ್ನ ಲಯಗಳು - ಆರು ಲಯಗಳು.
 (೨) ವೈಶಿಷ್ಟ್ಯಗಳು - ಮೌನ, ಕಂಪಿತ, ಮುಡಿ, ಪದ್ಮಗಣ
 (೩) ಸರಳ ರಗಳೆ - ಮಹಾಛಂದಸ್ಸು.
 ಪಠ್ಯ: ಕುವೆಂಪು ಅವರ ಶ್ರೀರಾಮಾಯಣದರ್ಶನಂ ಕಾವ್ಯ-
 'ಲಂಕಾಲಕ್ಷ್ಮಿ.....'

ನುಡಿ ಸ್ವಂದನ - ೧

ಬಿ.ಕಾಂ. ಪದವಿ ತರಗತಿಯ ಮೂರನೆ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ನುಡಿಪಠ್ಯ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ
೨೦೧೫ ರಿಂದ ೨೦೧೮

ಪ್ರಧಾನ ಸಂಪಾದಕರು

ಡಾ. ಕೆ. ಕೇಶವಶರ್ಮ

ಸಂಪಾದಕರು :

ಡಾ. ವಿರೂಪಾಕ್ಷಪ್ಪ ಹೆಚ್.ಎಸ್.

ಪ್ರೊ. ಆರ್.ಕೆ. ವಿನಯ್



ಪ್ರಕಾಶನ

ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ

ಭಾಗ-೧ ಪ್ರತಿರೋಧ / ೧

೧. ಪೂರ್ವಪಠ್ಯ : ವಚನಗಳು / ೨ ✓
 ನಿಗದಿತಪಠ್ಯ : ^{41*} ಗಾನರಾಣಿಯರ ಪ್ರಸಂಗ - ರಾಘವಾಂಕ / ೩
 ಪೂರಕಪಠ್ಯ : ಧನಿಯರ ಸತ್ಯನಾರಾಯಣ / ೭
 - ಕೊರಡ್ಕಲ್ ಶ್ರೀನಿವಾಸರಾವ್ ^{MP}

೨. ಪೂರ್ವಪಠ್ಯ : ನಿಮ್ಮೊಡನಿದ್ದೂ ನಿಮ್ಮಂತಾಗದೆ / ೧೨ ✓
 - ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್

- ನಿಗದಿತಪಠ್ಯ : ^{41*} ಅಮ್ಮಚ್ಚಿಯೆಂಬ ನೆನಪು - ವೈದೇಹಿ / ೧೪
 ಪೂರಕಪಠ್ಯ : ಮಾನವೀಯತೆ ಅಂತಾರಲ್ಲ ಅದರ ಬಗ್ಗೆ / ೨೫
 - ದೇವನೂರು ಮಹಾದೇವ

೩. ಪೂರ್ವಪಠ್ಯ : ಕಬ್ಬಿಗರ ಕಾವ - ಆಂಡಯ್ಯ / ೩೦
 ನಿಗದಿತಪಠ್ಯ : ಬಲಗೈ ಭಾಷೆಯ ಕವಟ್ಟು - ಜನಪದ / ೩೧ ✓
 ಪೂರಕಪಠ್ಯ : ಪುರಾಣ ಭಂಜನ - ರಹಮತ್ ತರೀಕೆರೆ / ೩೯

ಭಾಗ - ೨ - ಕೃಷಿ

೧. ಪೂರ್ವಪಠ್ಯ : ಪಾಂಡವರು ಅವರೆ - ಜನಪರ ಮಹಾಭಾರತ / ೪೭
 ನಿಗದಿತಪಠ್ಯ : ಭೂಮಿ ತಾಯಿಯ ಚೊಚ್ಚಲಮಗ / ೪೯
 - ದ.ರಾ. ಬೇಂದ್ರೆ

- ಪೂರಕಪಠ್ಯ : ಕೃಷಿಗೆ ಸಂಬಂಧಿಸಿದ ಸರ್ವಜ್ಞನ ವಚನಗಳು / ೫೧
 ಪ್ರೊ. ಶಿವರಾಮಯ್ಯ

೨. ಪೂರ್ವಪಠ್ಯ : ಅನ್ನ - ಹುಲಿಕುಂಟೆ ಮೂರ್ತಿ / ೫೫
 ನಿಗದಿತಪಠ್ಯ : ರೈತನ ದೃಷ್ಟಿ - ಕುವೆಂಪು / ೫೯
 ಪೂರಕಪಠ್ಯ : ಅಡಕೆ ಬೆಳೆಗಾರನ ಅಹವಾಲುಗಳು / ೬೦
 - ಕೆ.ವಿ. ಸುಬ್ಬಣ್ಣ

೨. ಪೂರ್ವಪಠ್ಯ : ಶಿವ ಉತ್ತಿಬಿತ್ತಿದ್ವೇನು - ಜನಪದ ಕತೆ / ೬೫

ನಿಗದಿತಪಠ್ಯ : ರೈತ ಚಳುವಳಿಯ ಹುಡುಕಾಟ - / ೬೬

ಪ್ರೊ. ಹಿ.ಶಿ. ರಾಮಚಂದ್ರೇಗೌಡ

ಪೂರಕಪಠ್ಯ : 'ಭೂ' ದಾನ - ಪಿ. ಸಾಯಿನಾಥ / ಅನು / ೭೬
ಜಿ.ಎನ್. ಮೋಹನ

ಭಾಗ - ೨ ವಾಣಿಜ್ಯ ಕನ್ನಡ / ೮೧

೧. ವಾಣಿಜ್ಯ ಪತ್ರಗಳು

೧. ವಿಚಾರಣಾ ಪತ್ರ / ೮೨

೨. ಬೆಲೆ ಸೂಚನಾ ಪತ್ರ / ೮೭

೩. ಆದೇಶ ಪತ್ರ / ೯೧

೪. ಉದ್ದರಿ ಪತ್ರ / ೯೪

೫. ವಸೂಲಿ ಪತ್ರ / ೯೯

೬. ಆಕ್ಷೇಪಣಾ ಪತ್ರ / ೧೦೩

೭. ಸಮಾಧಾನ ಪತ್ರ / ೧೦೮

೨. ಸಂವಹನ ಕೌಶಲಗಳು / ೧೧೨

೩. ಸಂವಹನ ಕನ್ನಡ / ೧೧೯

೧. ಟಿಪ್ಪಣಿಗಳು / ೧೨೯

೨. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಅಂಕ ವಿಭಜನೆಯ ಮಾದರಿ / ೧೩೫

ನುಡಿ ಸ್ವಂದನ-೨

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ
ಜಿ.ಕಾಂ ಪದವಿ ತರಗತಿಯ ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ನುಡಿಪಠ್ಯ
೨೦೧೬ ರಿಂದ ೨೦೧೯



ಪ್ರಧಾನ ಸಂಪಾದಕರು

ಡಾ. ಕೆ. ಕೇಶವ ಶರ್ಮ

ಸಂಪಾದಕರು

ಪ್ರೊ. ಜಿ. ಎನ್. ಬಸವರಾಜಪ್ಪ, ಪ್ರೊ. ಟಿ. ವಸಂತಕುಮಾರ್, ಡಾ. ಅರುಂಡಿನಾಗರಾಜಪ್ಪ



ಪ್ರಕಾಶನ

ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ

ಭಾಗ - ೧ ಬದುಕು

ಆಶಯ / ೧

ಪೂರ್ವ ಪಠ್ಯ : ವಚನ - ಅಕ್ಕಮಹಾದೇವಿ / ೩

ನಿಗದಿತ ಪಠ್ಯ :

೧. ಮದಿರೋನ್ನತ್ತರವೊಲವನಿಪಾಲರ್ - ಅಗ್ಗಳದೇವ / ೪

ಪೂರಕ ಪಠ್ಯ

೧. ಏನಾದರೂ ಮಾಡುತೀರು ತಮ್ಮ - ಎಂ. ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗ / ೭

೨. ಅ ಅ ಮತ್ತು - ಎಚ್. ಗೋವಿಂದಯ್ಯ / ೧೦

ನಿಗದಿತ ಪಠ್ಯ

೧. ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗ - ಡಾ. ಡಿ.ವಿ. ಗುಂಡಪ್ಪ / ೧೧

ಪೂರಕ ಪಠ್ಯ

೧. ಹಸುಮಗಳ ಹಂಬಲ - ಹೇಮಾಪಟ್ಟಣ ಶೆಟ್ಟಿ / ೧೪

೨. ಕನ್ನಡ ಮೌಲ್ವಿ - ಗೋರೂರು ರಾಮಸ್ವಾಮಿ ಅಯ್ಯಂಗಾರ್ / ೧೮

ನಿಗದಿತ ಪಠ್ಯ

೧. ನಮ್ಮ ಅಳತೆಯನ್ನು ಮೀರಲಾರದ ದೇವರು - ಡಾ. ಕೆ. ಶಿವರಾಮ ಕಾರಂತ / ೨೬

ಪೂರಕ ಪಠ್ಯ

೧. ಮುಸ್ಲಿಂ ಹುಡುಗಿಯ ಅಕ್ಷರ ದಾಹ - ಸಾರಾ ಅಬೂಬಕರ್ / ೩೮

೨. ಕಿವ್ವಡ ನಾಯಿಯಾದ ಪ್ರಸಂಗ - ಕುಂ. ವೀರಭದ್ರಪ್ಪ / ೪೫

ಭಾಗ - ೨ ಸೌಂದರ್ಯ

ಆಶಯ / ೬೫

ಪೂರ್ವ ಪಠ್ಯ

ಕಂಗಡಿಸುತ್ತಲೇ ಬಂದಿದೆ ಸೌಂದರ್ಯದ ಕ್ರೂರಸತ್ಯ - ಕೆ.ಎನ್. ಗಣೇಶಯ್ಯ / ೬೭

ನಿಗದಿತ ಪಠ್ಯ

೧. ಏಂ ತಾಳುದೋ ಚೆಲ್ಲನೀ ದೇಶಂ - ಲಕ್ಷ್ಮೀಶ / ೭೦

ಪೂರಕ ಪಠ್ಯ

೧. ವರ್ಷ ಭೈರವ - ಕುವೆಂಪು / ೭೩
೨. ಸಮಾಧಾನ - ಜಿ.ಪಿ. ರಾಜರತ್ನಂ / ೭೫

ನಿಗದಿತ ಪಠ್ಯ

೧. ಮಿಂಚುವೆಣ್ಣಿನ ವಿರಹವೆಂದಿಗೂ ಬೇಡ - ಕ. ನರಸಿಂಹಶಾಸ್ತ್ರಿ / ೭೬

ಪೂರಕ ಪಠ್ಯ

೧. ಪ್ರಶ್ನೆಗೆ ಉತ್ತರ - ಕೆ. ಎಸ್. ನರಸಿಂಹ ಸ್ವಾಮಿ / ೮೦
೨. ಜನಪದ ಕವಿಗಳು ಕಂಡ ಸೌಂದರ್ಯ - ಜನಪದರು / ೮೨

ನಿಗದಿತ ಪಠ್ಯ

೧. ಮಗುವಿನ ನಗು - ಪ್ರ. ತಿ. ನ. / ೮೪

ಪೂರಕ ಪಠ್ಯ

೧. ಕದಳಿಗರ್ಭಶ್ಯಾಮ - ಪಂಪ / ೮೬
೨. ನಾನೊಲ್ಲದ ನನ್ನ ಗುಣ - ಪಿ. ಲಂಕೇಶ್ / ೮೮

ಭಾಗ - ೩ ಸಂವಹನ

ಆಶಯ / ೧೦೧

ಅಧ್ಯಾಯ-೧

- ೧.೧ ಸಂವಹನದ ಪರಿಕಲ್ಪನೆ / ೧೦೩
- ೧.೨ ಸಂವಹನದ ಅರ್ಥ, ಅಗತ್ಯ / ೧೦೬
- ೧.೩ ಸಂವಹನ ಪರಂಪರೆ / ೧೦೭
- ೧.೪ ಪರಿಣಾಮಕಾರಿ ಸಂವಹನ ಹೇಗೆ ? / ೧೧೧

ಅಧ್ಯಾಯ-೨

- ೨.೧ ತಂತ್ರಜ್ಞಾನ ಮತ್ತು ಕನ್ನಡ - ಡಾ. ಕೆ.ವಿ. ನಾರಾಯಣ / ೧೧೬
- ೨.೨ ತಂತ್ರಜ್ಞಾನದ ಮೂಲಕ ಕನ್ನಡದ ಪ್ರಸಾರ - ಡಾ.ಸಾಂಬಮೂರ್ತಿ / ೧೨೧
- ೨.೩ ಇ-ಮಾಧ್ಯಮ / ೧೨೩
- ೨.೪ ಫೇಸ್ ಬುಕ್ ಸಾಹಿತ್ಯ - ರಾಜೇಂದ್ರ ಪ್ರಸಾದ್ / ೧೨೬

ಅಧ್ಯಾಯ-೩

- ೩.೧ ಭರವಸೆಯ ಬದುಕು / ೧೨೯
- ೩.೨ ಸಂದರ್ಶನವೆಂಬ ಅಗ್ನಿ ಪರೀಕ್ಷೆ / ೧೩೬
- ೩.೩ ಸ್ವ ಉದ್ಯೋಗಕ್ಕೆ ತೆರೆದ ಹೆಬ್ಬಾಗಿಲು / ೧೪೧
- ೩.೪ ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜನೆ / ೧೪೩
- ೩.೫ ಭಾಷಣ ಕಲೆ / ೧೪೫
- ಮಾದರಿ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ / ೧೪೯

ನುಡಿ ಸಂಪದ-೧

ಕನ್ನಡ ನುಡಿ ಪಠ್ಯ

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಡಾ. ಕೆ. ಕೇಶವಶರ್ಮ

ಸಂಪಾದಕರು
ಡಾ. ಡಿ.ಬಿ. ರಮೇಶ್
ಡಾ. ಕುಂಪಿ ಉಮೇಶ್



ಪ್ರಸಾರಾಂಗ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪತ್ಯದೊಡಲು

ತಾಯ್ನ :

- ಪೂರ್ವ ಪತ್ಯ : ಸಾಯೋತನಕ ಕಾಯಬೇಡ - ೦೨
 - ಇಮೇಲ್ ಕಥೆ
- ೧ ನಿಗದಿತ ಪತ್ಯ : ಧನಶ್ರೀಯ ಪುತ್ರದೋಹಳ ಪ್ರಸಂಗ - ೦೪
 - ನಾಗಚಂದ್ರ
- ಪೂರಕ ಪತ್ಯ : ಅವ್ವ-೧ - ೦೭
 - ಪಿ. ಲಂಕೇಶ್
- ಅವ್ವನ ಬಿಕ್ಕಳಕೆ ನಿಲ್ಲಿಸುವಿರಾ? - ೦೯
 - ಎ.ಎಸ್. ಮಕಾಂದಾರ್
- ೨ ನಿಗದಿತ ಪತ್ಯ : ಕುಂತಿ ಕರ್ಣನ ಭೇಟಿ - ೧೧
 - ಪಂಪ
- ಪೂರಕ ಪತ್ಯ : ತಾಯಿ - ೧೪
 - ಗಂಗಾಧರ ಚಿತ್ತಾಲ
- ಮರಗಿಡ ಬಳ್ಳಿ - ೧೬
 - ವೈದೇಹಿ
- ೩ ನಿಗದಿತ ಪತ್ಯ : ಎಳಗಿಳಿಯಂ ಕೊಱಲುಱಿದು ಮೋದಿದರಾರ್ - ೨೯
 - ಷಡಕ್ಷರ ದೇವ
- ಪೂರಕ ಪತ್ಯ : ಹೊಲಿಗೆ ಯಂತ್ರದ ಅಮ್ಮಿಯ ಕವಿತೆಗಳು - ೩೧
 - ಆರೀಫ್ ರಾಜಾ
- ಅಮ್ಮನ ಕಣ್ಣಿನ ಬೆಳಕು - ೩೩
 - ಆರುಂಡಿ ಶ್ರೀನಿವಾಸ ಮೂರ್ತಿ

ಸೃಜನ ಶೀಲತೆ :

- ಪೂರ್ವ ಪಠ್ಯ : ಪಾಠರಗಿತ್ತಿ ಪಕ್ಕ - ದ.ರಾ. ಬೇಂದ್ರೆ - ೩೮
- ೧ ನಿಗದಿತ ಪಠ್ಯ : ಸರೋವರದ ಸಿರಿಗನ್ನಡಿಯಲ್ಲಿ - ಪಂಪ-ರನ್ನ-ಕುಮಾರವ್ಯಾಸ - ೩೯
- ಪೂರಕ ಪಠ್ಯ : ಸವಾಲು ಗೆದ್ದ ಸಿದ್ಧ - ಕಲ್ಕುಳಿ ವಿಠಲ ಹೆಗಡೆ - ೪೧
- 'ಒಡಲಾಳ' ನಾಟಕದಿಂದ 'ಅನುಭವದ' ಹೊಸ್ತಿಲಿಗೆ - ಶ್ರೀಮತಿ ಉಮಾಶ್ರೀ - ೫೦
- ೨ ನಿಗದಿತ ಪಠ್ಯ : ಆಯ್ದ ವಚನಗಳು - ವಿವಿಧ ವಚನಕಾರರು - ೫೫
- ಪೂರಕ ಪಠ್ಯ : ಹೀರೆಯ ಹೂವು - ಕುವೆಂಪು - ೫೮
- ಕವಿ ಮನೆಯಲ್ಲಿ ಕಂಗಾಲಾದ ನಾಯಿ ಮರಿ - ಕಡಿದಾಳು ಶಾಮಣ್ಣ - ೬೧
- ೩ ನಿಗದಿತ ಪಠ್ಯ : ಸ್ವೀಫನ್ ಹಾಕಿಂಗ್ ಎಂಬ ಮೃತ್ಯುಂಜಯ - ಚಂದ್ರಶೇಖರ ಆಲೂರು - ೬೪
- ಪೂರಕ ಪಠ್ಯ : ಎಲ್ಲರೂ ಆಕೀಗೆ ಚಿತ್ರಹಿಂಸೆ ಕೊಟ್ಟೇ ಹುಟ್ಟಿದ್ದೀವಿ ರಾಜಾ ಹುಸೇನ್ ಖಿಲಂದರ್ - ೭೫
- ದಯಾನಂದ ಟಿ.ಕೆ.
- ಬ್ರಾಹ್ಮಣನ ಒಂದು ಹಲ್ಲಿಗೆ ಗೌಡನ ಎರಡು ಹಲ್ಲು - ೮೦
- ದೇವನೂರು ಮಹಾದೇವ

ಬರೆಹ - ಬರಹಗಾರ- ತಿಳುವುಗಳ ವಿವರಣೆ - ೮೫

ನಾಟಕ : ಯಯಾತಿ - ಗಿರೀಶ ಕಾರ್ನಾಡ - ೧೦೨

ಮಾದರಿ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ - ೧೨೮

ಸಂಪಾದಕರ ವಿಳಾಸ - ೧೨೯

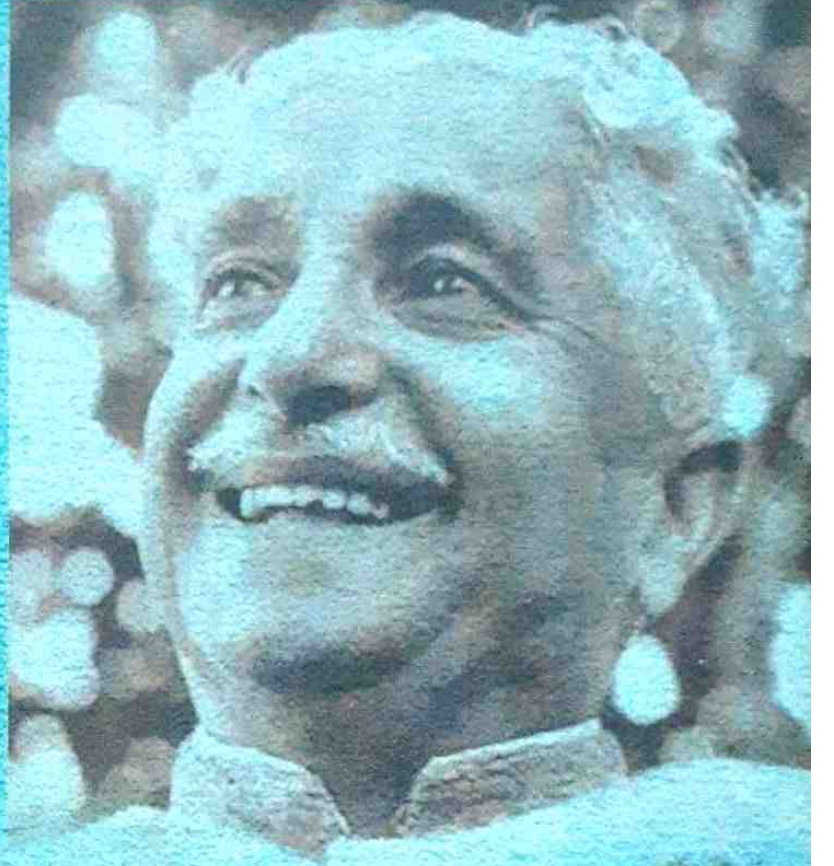
I Bcom 3
BA 12
Bsc-B-2
Bsc-C-2
+ Bcom-3

ನುಡಿ ಸಂಪದ - ೨

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಬಿ.ಎ./ಬಿ.ಎಸ್ಸಿ./ಬಿ.ಕಾಂ./ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ. ಪದವಿಗಳ
ದ್ವಿತೀಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ನುಡಿಪಠ್ಯ
೨೦೧೫ ರಿಂದ ೨೦೧೭

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಡಾ. ಕೆ. ಕೇಶವ ಶರ್ಮ

ಸಂಪಾದಕರು :
ಡಾ. ಮಾರ್ಷಲ್ ಶರಾಂ
ಡಾ. ರಘುನಾಥ ಎಚ್.ಎಸ್.



ಪ್ರಕಾಶನ

ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪಠ್ಯದೊಡಲು

ನೆಲ - ಜಲ

ಆಶಯ

ಪೂರ್ವಪಠ್ಯ:

ಭೂಮ್ಯಾತಂಕಗಳು ೨

- ಜಿ.ಎಲ್.ಜನಾರ್ದನ್

೨

ನಿಗದಿತ ಪಠ್ಯ:

ನೆಲಕಿವೆನೆಂದು ಬಗೆವಿಡಿ ೨

- ರನ್ನ

೫

ಪೂರಕ ಪಠ್ಯ:

ಹಸಿರಾಗಲಿ ಜೀವ |

- ಎಲ್.ಹನುಮಂತಯ್ಯ

೮

ನಮ್ಮ ಕಳವೆ ಗ್ರಾಮದ ಅಂಚಿನಲ್ಲಿ

- ಶಿವಾನಂದ ಕಳವೆ

೧೦

ನಿಗದಿತ ಪಠ್ಯ :

ನಾಡಸಿರಿ ೨

- ನಂಜುಂಡ ಕವಿ

೧೬

ಪೂರಕ ಪಠ್ಯ:

ಕೆರೆಗೆ ಹಾರ ೨

- ಜನಪದ ಕಥನ ಗೀತೆ

೧೯

ಪ್ರಾಣಿ ಪಕ್ಷಿ ಕೀಟ ಪ್ರಣಯ |

- ಶ್ರೀಮತಿ ಸುಮಂಗಲಾ

೨೩

ಎಸ್. ಮುಮ್ಮಿಗಟ್ಟಿ

ನಿಗದಿತ ಪಠ್ಯ:

ಕನ್ನಡಿಗರ ದೌರ್ಬಲ್ಯ ೨

- ಶೇಷನಾರಾಯಣ

೨೬

ಕನ್ನಡ ಜನಪದ ಗೀತೆಗಳಲ್ಲಿ ಮಳೆ ೨

- ಡಾ. ಎಸ್.ಪಿ.ಪದ್ಮಪ್ರಸಾದ್

೩೨

ಪಟ್ಟಣೀಕರಣ. . . ೧

- ಜಿ.ಎಸ್.ಸಿದ್ದಲಿಂಗಯ್ಯ

೩೮

I B A ಕಛಾಲ್ಕೇಶ = 2

I Bsc-B ಶಾಲೆ + 5678 = 2

I Bsc-C ಕಛಾಲ್ಕೇಶ = 2+

I Bcom - ಶಾಲೆ ನೆಲೆಲ = 3

ಕಾಲ

ಆಶಯ

ಪೂರ್ವಪಠ್ಯ:	- ಪುರಂದರದಾಸರ ಕೀರ್ತನೆ	೪೨
ಸತ್ಯವಂತರಿಗಿದು ಕಾಲವಲ್ಲ 1		
ನಿಗದಿತ ಪಠ್ಯ:	- ಪಂಪ	೪೩
ಸೂಟ್ಟಡೆಯಲಪ್ಪುದು ಕಾಣ...2		
ಪೂರಕ ಪಠ್ಯ:	- ಡಾ. ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ	೪೫
ಶಾರದೆ 1	- ಪ್ರತಿಭಾ ನಂದಕುಮಾರ್	೪೭
ಹೊಸವರ್ಷ 1		
ನಿಗದಿತ ಪಠ್ಯ:	- ಡಿ. ವಿ. ಜಿ	೪೯
ವಚನಗಳು ಮತ್ತು ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗ 2		
ಪೂರಕ ಪಠ್ಯ:	- ಕೆ.ಎಸ್. ನರಸಿಂಹಸ್ವಾಮಿ	೫೨
ಗಡಿಯಾರದಂಗಡಿಯ ಮುಂದೆ 2	- ಬ್ರಹ್ಮದೇವ ಜಿ. ಹದಳಗಿ	೫೪
ಕಾದಿ 1		
ನಿಗದಿತ ಪಠ್ಯ:		
ಕಾಲ ನಿಲ್ಲುವುದಿಲ್ಲ 2	- ಡಾ. ಚೆನ್ನವೀರ ಕಣವಿ	೫೬
ಪೂರಕ ಪಠ್ಯ:		
ನಮ್ಮೂರ ಕೆರೆ 2	- ಡಾ. ಕೆ. ಶಿವರಾಮಕಾರಂತ	೬೦
ಕಾಡಲ್ಲಿ-ನಾಡಲ್ಲಿ-ನನ್ನ ಹಾಡಲ್ಲಿ 1	- ಡಾ. ಸೈಯದ್ ಝಮೀರುಲ್ಲಾ ಷರೀಫ್	೬೫
ಬರೆಹ - ಬರಹಗಾರ ತಿಳಿವುಗಳ ವಿವರಣೆ		೬೭
ಕಥಾಲೋಕ		
೧. ಮೂಲಿಕೆ ಬಳ್ಳಿಯ ಸುತ್ತ	- ಕೆ.ಪಿ. ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ	೮೭
೨. ನೆನಪಿಗೆ ಮುಳುಗಡೆ ಇಲ್ಲ	- ಡಾ. ನಾ.ಡಿಸೋಜ	೯೪
೩. ಹಾರುವ ಹಕ್ಕಿಯ ಗೂಡಿನ ದಾರಿ	- ಗೋಪಾಲಕೃಷ್ಣ ಪೈ	೯೯
೪. ಜೀವ ಹಂಸ 1	- ಬಿದರಹಳ್ಳಿ ನರಸಿಂಹಮೂರ್ತಿ	೧೧೦
೫. ವಿಯೋಗ 1	- ಡಾ. ಕರೀಗೌಡ ಬೀಚನಹಳ್ಳಿ	೧೧೯
೬. ಬಿರುಬಿಟ್ಟ ನೆಲ	- ಡಾ. ನಟರಾಜ್ ಹುಳಿಯಾರ್	೧೨೮
೭. ಕಾಲ ಕಂಡೋನು	- ಜಾಣಗೆರೆ ವೆಂಕಟರಾಮಯ್ಯ	೧೩೭
೮. ಹಾವು	- ಶಶಿಧರ ವಿಶ್ವಾಮಿತ್ರ	೧೪೬
ಕಥೆಗಾರ ಕಥನ		೧೫೭
ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ		೧೬೩
ಸಂಪಾದಕರ ವಿಳಾಸ		೧೬೪

ನುಡಿ ಸಂಪದ - ೨

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಬಿ.ಎ./ಬಿ.ಎಸ್ಸಿ./ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ ಪದವಿ ತರಗತಿಗಳ
ಮೂರನೆ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ನುಡಿಪಠ್ಯ
೨೦೧೫ ರಿಂದ ೨೦೧೮

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಡಾ. ಕೆ. ಕೇಶವಶರ್ಮ

ಸಂಪಾದಕರು :
ಪ್ರೊ. ಐ. ಶಿವಲಿಂಗೇಗೌಡ
ಡಾ. ಅಣ್ಣಪ್ಪ ಎನ್. ಮಳಮಠ್



ಪ್ರಕಾಶನ

ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪಠ್ಯದೊಡಲು

ತಾಂತ್ರಿಕ (1)

೪೩

ಪ್ರಕೃತಿ : ರಾಗಭಕ್ತಕಲ - ರಾಗಭಕ್ತಕಲ - ರಾಗಭಕ್ತಕಲ - ರಾಗಭಕ್ತಕಲ

ಪ್ರವೇಶ : ರಾಗಭಕ್ತಕಲ - ರಾಗಭಕ್ತಕಲ - ರಾಗಭಕ್ತಕಲ - ರಾಗಭಕ್ತಕಲ

೧. ಪೂರ್ವ ಪಠ್ಯ : ಚಲದೊಳ್ ದುರ್ಯೋಧನಂ..... ಪಂಪ ೮

ನಿಗದಿತ ಪಠ್ಯ : (i) ಸಾಯಿಲಳುಕುವನೆ ಸುಡೇತಲದೀಯಿಳೆಯ ಬಾಳಿಕೆ - ಕುಮಾರವ್ಯಾಸ ೪

(ii) ಆಕೆಯಂ ತಾಯೆಂದು ವಕ್ರೋಕ್ತಿಯಿಂ ನುಡಿದಂ - ನಾಗಚಂದ್ರ ೧೩

ಪೂರಕ ಪಠ್ಯ : ರಾಮ ಕೃಷ್ಣ ಶಿವ - ಸವಿತಾ ನಾಗಭೂಷಣ. ೧೬

೨. ಪೂರ್ವ ಪಠ್ಯ : ಚರಿತೆ ಮತ್ತು ಕವಿತೆ - ಶೋಭಾನಾಯಕ್ ೨೪

ನಿಗದಿತ ಪಠ್ಯ : (i) ಬಲಗೈ ಭಾಷೆ ಕೊಡುವಂತ ಮಗಳಲ್ಲ - ಮಲೆಮಹದೇಶ್ವರ ಕಾವ್ಯ : ಸಂ. ಪಿ.ಕೆ. ರಾಜಶೇಖರ. ೨೫

(ii) ಈ ನೆಲದ ಹಾಡು - ಸ. ಉಷಾ ೩೮

ಪೂರಕ ಪಠ್ಯ : ಅಹಲೈ - ಸುಕನ್ಯಾ ಮಾರುತಿ ೪೧

೩. ಪೂರ್ವ ಪಠ್ಯ : ಪ್ರಾರ್ಥನೆ - ಬಿ.ಎಂ. ಶ್ರೀ ೪೨

ನಿಗದಿತ ಪಠ್ಯ : (i) ನನ್ನ ಅವತಾರ - ಎಂ. ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗಳಲ ೫೦

(ii) ನಾನು ನಾನೇ - ಚ. ಸರ್ವಮಂಗಳ ೫೦

ಪೂರಕ ಪಠ್ಯ : ನನ್ನ ನಮಾಜ್ - ಕಾ.ಹು. ಚಾನ್‌ಪಾಷ ೫೦

೪. ಪೂರ್ವ ಪಠ್ಯ : ಆರು ಹಿತವರು ಎಂದು ನಂಬಬೇಡ - ಕನಕದಾಸ ೫೬

ನಿಗದಿತ ಪಠ್ಯ : (i) ಬುರ್ಕಾದೊಳಗಿನ ಹಾಡು - ಪೀರ್‌ಬಾಷಾ ೫೭

(ii) ಸೀಸಾ ನಾಟು - ಚಾಂದಿನಿ ೫೮

ಪೂರಕ ಪಠ್ಯ : ಬೂದಿ ಮಾತ್ರ ಬಲ್ಲುದು ಬೇಯುವ ಬಗೆಯನ್ನು - ಶಿವ ಡಾ. ಮೂಡ್ಡಾಕೂಡು ಚೆನ್ನಸ್ವಾಮಿ.

ಭಾಗ - ೨

ಆತ್ಮಕಥನಗಳು

(i) ಪ್ರವೇಶ

೧. ಬ್ರಹ್ಮಚರ್ಯ ಮತ್ತು ಸರಳಜೀವನ - ಮೋಹನದಾಸ ಕರಮಚಂದ ಗಾಂಧಿ ೬೪
ಅನು: ಗೋರೂರು ರಾಮಸ್ವಾಮಿ ಅಯ್ಯಂಗಾರ್ ೬೨

೨. ಬದುಕು ರೂಪಿಸಿದ ತಾಯಿ - ಸ.ಜ. ನಾಗಲೋಟಿ ಮಠ ೭೫

೩. ವಿದ್ಯಾರ್ಥಿ ಜೀವನ ಮತ್ತು ಭವಿಷ್ಯ - ಡಾ. ಅರವಿಂದ ಮಾಲಗತ್ತಿ ೬೮೫

೪. ನನ್ನ ಬದುಕಿನ ದುರಂತ ತಿರುವು - ನಳಿನಿ ಜಮೀಲಾ ೬ ೯೮

ಅನು : ಕೆ. ನಾರಾಯಣಸ್ವಾಮಿ

೫. ನಾನು ಅವನಲ್ಲ ಅವಳು - ಲಿವಿಂಗ್ ಸ್ಟ್ರೀಟ್ ವಿದ್ಯಾ ೮ ೧೦೯

ಅನು : ಡಾ. ತಮಿಳ್ ಸೆಲ್ವಿ

ಭಾಗ- ೩

ವಿಚಾರ ಸಾಹಿತ್ಯ

(i) ಪ್ರವೇಶ:

೧. ವಿಚಾರ ಕ್ರಾಂತಿಗೆ ಆಹ್ವಾನ - ಕುವೆಂಪು ೧೩೨
೨. ಜಾತಿ - ಡಾ. ಬಿ.ಆರ್. ಅಂಬೇಡ್ಕರ್ ೧೩೫

೩. ಸೌಂದರ್ಯ ಮತ್ತು ಮೈಬಣ್ಣ - ರಾಮ ಮನೋಹರ ಲೋಹಿಯಾ ೧೪೧

೪. ಮತಾಂತರ ಹಾಗೂ ಜಾತ್ಯಾತೀತ ಧೋರಣೆ - ೧೫೪

ಕೆ.ಪಿ. ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ ೧೬೩

೫. ಬುದ್ಧನಿಂದ ಅಂಬೇಡ್ಕರ್‌ವರೆಗೆ - ಡಾ. ವಸು ಮಳಲಿ ೧೬೮

೬. ಹಸಿರು ಕಾಳಜಿ ಏಕೆ ಬೇಕು - ಡಾ. ಚಂದ್ರಶೇಖರ ನಂಗಲಿ ೧೭೩

* * * * *

ನುಡಿ ಸಂಪದ - ೪

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಬಿ.ಎ./ಬಿ.ಎಸ್ಸಿ/ಬಿ.ಎಸ್ ಡಬ್ಲ್ಯೂ/
ಪದವಿ ತರಗತಿಗಳ ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ನುಡಿಪಠ್ಯ
೨೦೧೬ ರಿಂದ ೨೦೧೯

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಡಾ. ಕೆ. ಕೇಶವ ಶರ್ಮ

ಸಂಪಾದಕರು:
ಡಾ. ಹೆಚ್. ಟಿ. ಕ್ರಿಷ್ಣಮೂರ್ತಿ, ಡಾ. ಪ್ರಕಾಶ ಮಠನಳ್ಳಿ



ಪ್ರಕಾಶನ
ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪಠ್ಯದೊಡಲು

ಭಾಗ-I

ಕನ್ನಡದ ಸಾಧ್ಯತೆಗಳು

ಪ್ರವೇಶ	೦
೧. ಪೂರ್ವ ಪಠ್ಯ : ನಾಡವರ್ಗಲ್ - ಶ್ರೀ ವಿಜಯ	೨
ನಿಗದಿತ ಪಠ್ಯ : ಅಖಂಡ ಕರ್ನಾಟಕ - ಕುವೆಂಪು	೩
ಪೂರಕ ಪಠ್ಯ : ಕನ್ನಡ ತಾಯಿಯ ಅಂದವ ನೋಡು - ಸಮೂಹ ಸೃಷ್ಟಿ	೬
೨. ಪೂರ್ವ ಪಠ್ಯ : ಮೃಗಯಾವ್ಯಾಜದಿನೋರ್ಮೆ - ಪಂಪ	೧೨
ನಿಗದಿತ ಪಠ್ಯ : ನೆತ್ತಮನಾಡಿ - ಪಂಪ	೧೩
ಪೂರಕ ಪಠ್ಯ : ಎತ್ತಣ ಮಾಮರ ಎತ್ತಣ ಕೋಗಿಲೆ - ಅಲ್ಲಮಪ್ರಭು	೧೫
೩. ಪೂರ್ವ ಪಠ್ಯ : ಗುಬ್ಬೀಮನಿ - ಶಶಿಕಲಾ ವೀರಯ್ಯಸ್ವಾಮಿ	೧೯
ನಿಗದಿತ ಪಠ್ಯ : ಧಣಿಗಳ ಬೆಳ್ಳಿಲೋಟ - ಎಚ್. ನಾಗವೇಣಿ	೨೧
ಪೂರಕ ಪಠ್ಯ : ಮನೋರೋಗವೇ ಜಾತಿ - ಎಂ. ಲಕ್ಷ್ಮಣ್	೩೦
೪. ಪೂರ್ವ ಪಠ್ಯ : ಅಡುಗೆ ಮಾಡುತ್ತಿದ್ದೇನೆ- ಪ್ರತಿಭಾ ನಂದಕುಮಾರ್	೩೯
ನಿಗದಿತ ಪಠ್ಯ : ನಾಳೆಗೆ ಇಲ್ಲಿ ಒಳ್ಳೆ ನೀರು ಬರುತ್ತದೆ ಕಣಾ - ಮಂಟೇಸ್ವಾಮಿ ಕಾವ್ಯ	೪೧
ಪೂರಕ ಪಠ್ಯ : ಪುಷ್ಪರಗಳೆ - ಲಲಿತಾ ಸಿದ್ಧಬಸವಯ್ಯ	೫೦
೫. ಪೂರ್ವ ಪಠ್ಯ : ಇದು ನಿಜಕ್ಕೂ ಪ್ರಕೃತಿ ಪವಾಡ ಬೇಸಾಯ - ದೇವನೂರು ಮಹಾದೇವ	೫೭
ನಿಗದಿತ ಪಠ್ಯ : ದುಡ್ಡಿನ ಹೊಳೆ ಹರಿಸದೆಯೇ ಸಮೃದ್ಧಿಯ ಹೊಳೆ ಹರಿಸಲು ಸಾಧ್ಯವಿಲ್ಲವೇ? - ನಾಗೇಶ ಹೆಗಡೆ	೬೦
ಪೂರಕ ಪಠ್ಯ : ಯಂತ್ರಗಳಿಂದ ಕಡೆಗಣಿಸಲ್ಪಟ್ಟ ಮನುಷ್ಯ - ಪ್ರಸನ್ನ	೬೫
೬. ನಿಗದಿತ ಪಠ್ಯ : ಹೂ ಹುಡುಗಿ - ಜನಪದ	೭೨

ಭಾಗ-II
ಪ್ರಯೋಗ ಕನ್ನಡ

ಪ್ರವೇಶ

ಅಧ್ಯಾಯ-೧

೧.೧.	ಲೇಖನ ಚಿನ್ನೆಗಳು	೮೪
೧.೨.	ಪತ್ರ ಮಾಧ್ಯಮ	೯೫
೧.೩.	ಬರವಣಿಗೆ ಕಲೆ	೧೦೮

ಅಧ್ಯಾಯ-೨

೨.೧.	ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜನೆ	೧೧೦
೨.೨.	ಭಾಷಣ ಕಲೆ	೧೧೩
೨.೩.	ಸಂದರ್ಶನ	೧೧೬
೨.೪.	ಸಂಭಾಷಣೆ	೧೨೨

ಅಧ್ಯಾಯ-೩

	ಹತ್ತು ಕಟ್ಟೋ ಕಡೆ ಒಂದು ಮುತ್ತು ಕಟ್ಟು	೧೨೫
೩.೧.	ಗಾದೆಗಳು	೧೨೫
೩.೨.	ಒಗಟುಗಳು	೧೨೯
೩.೩.	ಮಿನಿಕತೆಗಳು	೧೩೧
೩.೪.	ಚುಟುಕುಗಳು	೧೩೪

ಅಧ್ಯಾಯ-೪

	ಮಾನವ ಸಂವರ್ಧನೆ	೧೪೦
--	---------------	-----

ಕನ್ನಡ ಸೊಲ್ಲಲಿಮೆ - ೧

ಬಿ.ಎ. ಪದವಿ ತರಗತಿಯ ಮೂರನೆ ಸೆಮಿಸ್ಟರ್ ಐಚ್ಛಿಕ ಕನ್ನಡ ಪಠ್ಯ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ
೨೦೧೫ ರಿಂದ ೨೦೧೮

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಡಾ. ಕೆ. ಕೇಶವಶರ್ಮ

ಸಂಪಾದಕರು :
ಡಾ. ಶೈಲಜಾ ಹೊಸಕೆರೆ
ಡಾ. ಶುಭ ಮರವಂತೆ



ಪ್ರಕಾಶನ
ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಸೊಲ್ಲರಿಮೆಯ ಒಡಲು

ಭಾಗ : ೧ ಕನ್ನಡ ಸೊಲ್ಲರಿಮೆ - ೧

ಅರಿಮೆ ೧. ಕನ್ನಡ ಸೊಲ್ಲರಿಮೆಯ ಸ್ವರೂಪ	೧-೧೪
ಅರಿಮೆ ೨. ವರ್ಣಮಾಲೆ ✓	೧೫-೫೩
ಅರಿಮೆ ೩. ಕನ್ನಡ ಸಂಧಿಗಳು ✓	೫೪-೭೩
ಅರಿಮೆ ೪. ಹೆಸರು ಪದ ವಿಚಾರ ✓	೭೪-೧೨೩
ಅರಿಮೆ ೫. ಸೊಲ್ಲರಿಮೆ : ಭಾಷೆ-ಸಂಸ್ಕೃತಿ-ಸಾಹಿತ್ಯ ಸಂಬಂಧ	೧೨೪-೧೩೬

ಭಾಗ : ೨ ಹೆಣ್ಣೊಡಲ ದನಿ

ಒಡಲೊಳಗೆ ಹುಗುವ ಮುನ್ನ (ಸಂಪಾದಕರ ದನಿ)	೧೩೯-೧೪೧
ದನಿ ೧. ಸತ್ಯವಂತೆ ಸಂಕಮ್ - ಬುಡಕಟ್ಟು ಮಹಾಕಾವ್ಯ	೧೪೨-೧೬೨
ದನಿ ೨. ಗಂಗೇಗೂ ಗೌರೀಗೂ ಹತ್ತೀತು ಜಗಳ	೧೬೩-೧೭೫
- ದೊಂಬಿದಾಸರ ಲಾವಣಿ (ಜಾನಪದ ಲಾವಣಿ)	
ದನಿ ೩. ಸತ್ಯನಾಪುರದ ಸಿರಿ -ಜಾನಪದ ಮಹಾಕಾವ್ಯ	೧೭೬-೧೮೨
ಪೂರಕ ಲೇಖನ : ಜನಪದ ಮಹಾಕಾವ್ಯಗಳು	೧೯೫-೨೦೮
- ಡಾ. ಅಂಬಳಿಕೆ ಹಿರಿಯಣ್ಣ	
ಅನುಬಂಧ ೧ ಆಕರ ಕೃತಿಗಳು	೨೦೯-೨೧೦
ಅನುಬಂಧ ೨ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಸ್ವರೂಪ	೨೧೧
ಲೇಖಕರ ವಿಳಾಸ	೨೧೨

ಕನ್ನಡ ಸೊಲ್ಲರಿಮೆ-೨

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಜಿ.ಎ. ಪದವಿ ತರಗತಿಯ

ನಾಲ್ಕನೆ ಸೆಮಿಸ್ಟರ್ ಐಚ್ಛಿಕ ಕನ್ನಡ ಪಠ್ಯ

೨೦೧೬-೨೦೧೭

VA

ಪ್ರಧಾನ ಸಂಪಾದಕರು

ಡಾ. ಕೆ. ಕೇಶವ ಶರ್ಮ

ಸಂಪಾದಕರು

ಡಾ. ಹೆಚ್. ಟಿ. ಕ್ರಿಷ್ಣಮೂರ್ತಿ, ಡಾ. ಕುಂಸಿ ಉಮೇಶ



ಶಬ್ದ ಪಾರ ಮಾರ್ಗಂ ಅಶಕ್ಯಂ



ಪ್ರಕಾಶನ

ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ

ಭಾಗ: ೧

ಕನ್ನಡ ಸೊಲ್ಲರಿಮೆ-೨

ಪಸುಗೆ ಒಂದು ಸಮಾಸಗಳು	೧
ಪಸುಗೆ ಎರಡು ಕೆಲಸ ಪದಗಳು, ಸಮಯಸೂಚಿ ಒಟ್ಟುಗಳು	೧೨
ಪಸುಗೆ ಮೂರು ಅವ್ಯಯ ವಿಚಾರ	೨೪
ಪಸುಗೆ ನಾಲ್ಕು ಸರಿ-ತಪ್ಪುಗಳು	೨೮
ಪಸುಗೆ ಐದು ಕನ್ನಡ ನೆಂಟಸ್ತಿಕೆ	೩೫
ಪಸುಗೆ ಆರು ಕನ್ನಡ ವಾಕ್ಯ ರಚನೆ(ಕನ್ನಡ ವಾಕ್ಯ ಸೊಲ್ಲರಿಮೆ)	೪೪

ಭಾಗ: ೨

ರಾಮಧಾನ್ಯ ಚರಿತ್ರೆ

ರಾಮಧಾನ್ಯ ಚರಿತ್ರೆ	೫೫
ಅನುಬಂಧ ಪದವಿವರಣೆ	೧೦೩

ಕನ್ನಡ ಸೂಲ್ಲಲಿಮೆ - ೨

ಜಿ. ಎ. ಪದವಿಯ ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್

ಐಚ್ಛಿಕ ಕನ್ನಡ ಪಠ್ಯ

೨೦೧೯ ರಿಂದ ೨೦೨೨

ಪ್ರಧಾನ ಸಂಪಾದಕರು

ಡಾ. ಜಿ. ಪ್ರಶಾಂತ ನಾಯಕ

ಸಂಪಾದಕರು

ಡಾ. ಎಚ್.ಐ. ಕೃಷ್ಣಮೂರ್ತಿ

ಡಾ. ಹಣ್ಣಹನುಮಪ್ಪ

ಡಾ. ಕುಂದಿ ಉಮೇಶ್



ಪ್ರಸಾರಾಂಗ

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ :

ಒಡಲು

ವಿಭಾಗ-೧

ಕನ್ನಡ ಸೊಲ್ಲರಿಮೆ - ೨

೧.	ಸಮಾಸಗಳು	೩
೨.	ಕೆಲಸ ಪದ	೧೪
೩.	ಅವ್ಯಯ ವಿಚಾರ ✓	೨೭
೪.	ಬರವಣಿಗೆ-ಉಲಿ, ಸರಿ-ತಪ್ಪುಗಳು ✓	೩೧
೫.	ಕನ್ನಡ ನೆಂಟಸ್ತಿಕೆ ✓	೩೮
೬.	ಕನ್ನಡ ವಾಕ್ಯರಚನೆ (ವಾಕ್ಯ ಸೊಲ್ಲರಿಮೆ) ✓	೪೭
೭.	ಸೊಲ್ಲರಿಮೆಯ ವಾಕ್ಯಗಳು ✗	೫೬

1. ಬ್ಯಾರಿಸ್ಟರಿಮೆ

ವಿಭಾಗ-೨

ಜಾನಪದ

೧.	ಕನ್ನಡ ಜಾನಪದ ಪ್ರವೇಶಿಕೆ ✗	೬೧
೨.	ಜಾನಪದ ಸ್ವರೂಪ ಮತ್ತು ಲಕ್ಷಣಗಳು ✓	೬೪
೩.	✗ ಜಾನಪದ ವರ್ಗೀಕರಣ	೭೧
	/ ಅ. ತ್ರಿಪದಿ ಸಾಹಿತ್ಯ	೭೩
	/ ಆ. ಕಥನ ಗೀತೆ	೭೫
	/ ಇ. ಶಿಶು ಪ್ರಾಸ ✗	೭೮
	/ ಈ. ಜಾನಪದ ಕಥೆ	೮೩
	/ ಉ. ಗಾದೆಗಳು	೮೮
	/ ಊ. ಒಗಟುಗಳು	೯೨
೪.	ಕನ್ನಡ ಜಾನಪದ: ದೇಸಿ ಪುಜ್ಜೆ	೯೮
೫.	ಜಾನಪದ ಕಲಾವಿದರು ✓	೧೦೭
	/ ಅ. ಸುಕ್ರಿ ಬೊಮ್ಮಗೌಡ - ಹಿ.ಚಿ.ಬೋರಲಿಂಗಯ್ಯ	
	/ ಬುಂಜಪ್ಪನ ಪದಗಳ ಗಿಡ್ಡಜ್ಜು - ಮೀರಾಸಾಬಿಹಳ್ಳಿ ಶಿವಣ್ಣ	
೬.	ಟಿಪ್ಪಣಿಗಳು	೧೧೫
೭.	ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಸ್ವರೂಪ ಮತ್ತು ಮಾದರಿ	೧೧೭

ನಾಹಿತ್ಯ ಸಂಕಥನ-೧

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಡಾ. ಕೆ. ಕೇಶವಶರ್ಮ

ಸಂಪಾದಕರು
ಡಾ. ಬಿ.ಎಂ. ಜಯಶೀಲ
ಡಾ. ಮೋಹನ ಚಂದ್ರಗುತ್ತಿ



ಪ್ರಸಾರಾಂಗ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ

✓ ೧.	ಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯ	UA	- 01
೨.	ಶಾಸನ ಸಾಹಿತ್ಯ		- 07
	ಅ. ಹಲಿಡಿ ಶಾಸನ		- 11
✓	ಆ. ಬಾದಾಮಿ ಶಾಸನ	UA	- 12
	ಇ. ಶ್ರವಣ ಬೆಳಗೊಳ ಶಾಸನಗಳು		- 12
	ಈ. ಹಂಪಿ ಶಾಸನ		- 12
೩.	ಚಂಪು ಸಾಹಿತ್ಯ		- 15
	ಅ. ನೆಲಸುಗೆ ನಿನ್ನ ವಕ್ಷದೊಳೆ - ಪಂಪ		- 30
	ಆ. ಕ್ರಮವಿಪರೈಯಂ ಮಾಡುವುದೇ- ರನ್ನ	SKS	- 33
	ಇ. ಕದಡಿದ ಸಲಿಲಂ ತಿಳಿವಂದೆದೆ - ನಾಗವರ್ಮ		- 36
	ಈ. ಕಾದಲನಂತಿರೆ ಚೆಲ್ವನೆ- ಜನ್ನ		- 39
೪.	ವಚನ ಮತ್ತು ರಗಳೆ ಸಾಹಿತ್ಯ		- 42
	ಜೇಡರ ದಾಸಿಮಯ್ಯ, ಮಾದಾರ ಚನ್ನಯ್ಯ, ಬಸವಣ್ಣ, ಅಲ್ಲಮಪ್ರಭು, ಅಕ್ಕಮಹಾದೇವಿ, ಅಂಬಿಗರ ಚೌಡಯ್ಯ	UA	
	ನುಲಿಯ ಚಂದಯ್ಯ, ಉರಿಲಿಂಗ ಪೆದ್ದಿ, ಗೊಗ್ಗವ್ವ ಮಾದಾರ ಧೂಳಯ್ಯ, ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ		
೫.	ಪಟ್ಟಡಿ ಸಾಹಿತ್ಯ		- 59
	ಅ. ನಿನ್ನ ಮುತ್ತಿನ ಸತ್ತಿಗೆಯನಿತ್ತು ಸಲಹು - ರಾಘವಾಂಕ	UA-2	- 65
✓	ಆ. ಸ್ತ್ರೀ ಮತವನುತ್ತರಿಸಬಾರದೆ ಧರ್ಮಮಾರ್ಗದೊಳ್ - ಕುಮಾರವ್ಯಾಸ		- 69
	ಇ. ಲೋಕದೊಳ್ ವಿಧಿಲಿಖಿತ ಮನ್ನಿಪರುಂಟೆ - ಲಕ್ಷ್ಮೀಶ		- 72

೧. ಸಾಂಗತ್ಯ ಸಾಹಿತ್ಯ	- ೭೬
ಅ. ಪತಿಹೊಲ್ಲ ಸತಿ ಲೇಸು ಸತಿ ಹೊಲ್ಲ ಪತಿ ಲೇಸು - ರತ್ನಾಕರವರ್ಣಿ	- ೮೩
ಆ. ಕುವರಿಯಾದೊಡೆ ಕುಂದೇನು? - ಸಂಜೆಹೊನ್ನಮ್ಮ	SKS - ೮೪
೨. ತ್ರಿಪದಿ ಮತ್ತು ಕೀರ್ತನಾ ಸಾಹಿತ್ಯ	- ೮೬
ಅ. ಸರ್ವಜ್ಞನ ವಚನಗಳು	- ೯೦
ಆ. ಕನಕದಾಸರ ಕೀರ್ತನೆಗಳು	SKS - ೯೨
ಇ. ಪುರಂದರದಾಸರ ಕೀರ್ತನೆಗಳು	- ೯೪
ಈ. ಶಿಶುನಾಳ ಪರೀಫರ ತತ್ವಪದ	- ೯೬
೩. ಗದ್ಯ ಸಾಹಿತ್ಯ	- ೯೭
ಅ. ನರಿಯುಂ ಬಿಲನುಂ □ ದುರ್ಗಸಿಂಹ	- ೧೦೧
ಆ. ಮುದ್ದಣ-ಮನೋರಮೆಯರ ಸಲ್ಲಾಪ	SKS - ೧೦೩
೪. ಒಡೆಯರ ಕಾಲದ ಸಾಹಿತ್ಯ	UA - ೧೦೭
೧೦. ಜಾನಪದ ಸಾಹಿತ್ಯ	- ೧೦೯
ಅ. ತ್ರಿಪದಿಗಳು	- ೧೧೪
ಆ. ಗಾದೆಗಳು	SKS - ೧೧೬
ಇ. ಒಗಟು	- ೧೧೮
ಈ. ಕಥೆಗಳು	- ೧೨೦
ಮಾದರಿ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ	- ೧೨೬
ಸಂಪಾದಕರ ವಿಳಾಸ	- ೧೨೭

UP

ಭಾಷಾ ಬೆಡಗು - ೩

ಬಿ.ಎ. / ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ ಪದವಿಯ
ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್

ಪ್ರಧಾನ ಸಂಪಾದಕರು

ಡಾ. ಜಿ. ಪ್ರಬಾಂಕ ನಾಯಕ

ಸಂಪಾದಕರು

**ಡಾ. ಸುಂದರೇಶ್. ಎನ್.
ಡಾ. ಪುಷ್ಪಭಾರತಿ. ಆರ್. ಎ.
ಸುಧಾ. ಎ. ಆರ್.**



ಪ್ರಸಾರಾಂಗ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ

ಭಾಗ - ೧

ಪುಟ ಸಂಖ್ಯೆ

✓ ಜಾತ್ಯತೀತತೆ ಪೂರ್ವ ಪಠ್ಯ :	ಕಸವರಮೆಂಬುದು ✓ - ಶ್ರೀವಿಜಯ	೩
✓ ಪಠ್ಯ ೧ :	ಕುಲಂಕುಲಮಲು ಚಲಂಕುಲಂ ✓ - ಪಂಪ	೪
ಪೂರಕ ಪಠ್ಯ :	ನಾವೆಲ್ಲರು ಒಂದೆ ಜಾತಿ - ಎಂ. ಗೋಪಾಲ ಕೃಷ್ಣ ಅಡಿಗ	೭
✓ ಪಠ್ಯ ೨ :	ದೇವದೇವನೊಲ್ಲನ ಕುಲಂ ಸತ್ಕುಲಂ - ಹರಿಹರ	೯
✓ ಪೂರಕ ಪಠ್ಯ :	ಒಬ್ಬತಂದೆಯ ಹಾಡು - ಪ್ರೊ. ಅರವಿಂದ ಮಾಲಗತ್ತಿ	೧೪
✓ ಪಠ್ಯ ೩ :	ಸರ್ವಜ್ಞನ ತ್ರಿಪದಿಗಳು - ಸರ್ವಜ್ಞ	೧೫
ಪೂರಕ ಪಠ್ಯ :	ಇಪ್ಪತ್ತೊಂದನೆಯ ಶತಮಾನಕ್ಕೆ ಇಪ್ಪತ್ತನೆಯ ಶತಮಾನದ ಹಾಡು - ಸುಜನಾ	೧೭
✓ ಪಠ್ಯ ೪ :	ಸಾಮರಸ್ಯ - ಸುಮತೀಂದ್ರ ನಾಡಿಗ	೧೯
ಪೂರಕ ಪಠ್ಯ :	ಕುಲ ಕುಲ ಕುಲವೆನುತಿಹರು - ಕನಕದಾಸರು	೨೧
✓ ಪಠ್ಯ ೫ :	ಸಾಬ್ರಜ್ಜ ✓ - ಪ್ರೊ. ಎಂ. ಎಸ್. ಶೇಖರ್	೨೨
✓ ಪೂರಕ ಪಠ್ಯ :	ಭಿನ್ನ ಭೇದವ ಮಾಡ ಬೇಡಿರೋ ✓ - ತತ್ವ ಪದ	೨೬
✓ ಪಠ್ಯ ೬ :	ಬೆಳಕು ಹೊತ್ತವರ ಕಾಲು ಕತ್ತಲೆ - ಸುಬ್ಬು ಹೊಲೆಯಾರ್	೨೭
✓ ಪೂರಕ ಪಠ್ಯ :	ಕಾಡು ✓ - ಸರಜೂಕಾಟ್ಟರ್	೨೯
✓ ಪಠ್ಯ ೭ :	ಮೂಡಿತೊಂದು ಕೆಂಪು ಚುಕ್ಕೆ - ಕೋಟಿಗಾನಹಳ್ಳಿ ರಾಮಯ್ಯ	೩೦
✓ ಪೂರಕ ಪಠ್ಯ :	ಮುಳ್ಳು ಕಂಟಿಯ ನಡುವೆ - ಅನಸೂಯ ಕಾಂಬಳೆ	೩೩
✓ ಪಠ್ಯ ೮ :	ದೇವದಾಸಿಯ ಮಗಳ ಸ್ವಗತ - ಸುಕನ್ಯಾ ಮಾರುತಿ	೩೪
✓ ಪೂರಕ ಪಠ್ಯ :	ಪ್ರತಿಜ್ಞೆ - ರಂಜಾನ್‌ದರ್ಗಾ	೩೬

ಭಾಗ - ೨

ಪುಟ ಸಂಖ್ಯೆ

ಸಮಾಜಮುಖಿ ಸಾಹಿತ್ಯ

- | | | |
|------|---|----|
| ✓ ೧. | ಜಾತ್ಯತೀತತೆ ಒಂದು ನೋಟ
- ಪ್ರೊ. ಬರಗೂರು ರಾಮಚಂದ್ರಪ್ಪ | ೫೯ |
| ✓ ೨. | ಮಾನವೀಯತೆಯ ಕ್ರಾಂತಿಯಾಗಬೇಕು
- ಬಿ. ಬಸವಲಿಂಗಪ್ಪ | ೬೫ |
| ✓ ೩. | ಅಕ್ಕಮಹಾದೇವಿ ವಚನಗಳಲ್ಲಿ ಸ್ತೋಟಗುಣ
- ವಿಜಯಶ್ರೀ ಸಬರದ | ೭೬ |
| ೪. | ಹೆಣ್ಣಿಗೇನು ಬೇಕು: ಸ್ವಾತಂತ್ರ್ಯವೋ?
ಸಮಾನತೆಯೋ?
ಮೂಲ : ಕಿಶನ್ ಪಟ್ನಾಯಕ್
ಅನುವಾದ : ಪ್ರೊ. ಕಾಳೇಗೌಡ ನಾಗವಾರ | ೮೬ |
| ೫. | ಬಹು ಸಂಸ್ಕೃತಿಯ ಮೇಲೆ ಏಕ ಸಂಸ್ಕೃತಿಯ
ದಬ್ಬಾಳಿಕೆ
- ಪ್ರೊ. ಹಿ. ಶಿ. ರಾಮಚಂದ್ರೇಗೌಡ | ೯೩ |
| ೬. | ಹೋರಾಟದ ಹಾದಿ
- ಡಾ ಎಚ್. ನರಸಿಂಹಯ್ಯ | ೯೯ |

ಭಾಗ - ೩

- | | | |
|----|--------------------------|-----|
| ೧. | ✓ ಒಡಲಾಳ - ದೇವನೂರು ಮಹಾದೇವ | |
| ೨. | ಮಾದರಿ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ | ೧೧೫ |
| ೩. | ಸಂಪಾದಕರ ವಿಳಾಸ. | ೧೧೬ |

ನುಡಿ ಸವಿ - ೨

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಬಿ.ಬಿ.ಎಂ./ಬಿ.ಸಿ.ಎ./ಬಿ.ಎಫ್.ಡಿ./ಬಿ.ಎಫ್.ಎ./ಬಿ.ಎಸ್.ಎ./
ಪದವಿ ತರಗತಿಗಳ ಮೂರನೆ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ನುಡಿ ಪಠ್ಯ
೨೦೧೫ ರಿಂದ ೨೦೧೮

UA

ಪ್ರಧಾನ ಸಂಪಾದಕರು
ಡಾ. ಕೆ. ಕೇಶವಶರ್ಮ

ಸಂಪಾದಕರು :
ಡಾ. ಬಿ.ಜಿ. ಅಮೃತೇಶ್ವರ
ಪ್ರೊ. ಬಿ.ಪಿ. ಮಹದೇವ



ಪ್ರಕಾಶನ
ಪದವಿ ಕಾಲೇಜು ಕನ್ನಡ ಅಧ್ಯಾಪಕರ ವೇದಿಕೆ
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪರಿವಿಡಿ

ಭಾಗ-I ಜೀವನ ಪ್ರೀತಿ

೧.	ಸೂಫಿಕತೆ	೧
೨.	ಚಂದ್ರಾಪೀಡ ಕಾದಂಬರಿಯ ಪ್ರಥಮ ಭೇಟಿ - ಮೊದಲನೆ ನಾಗವರ್ಮ	೨
೩.	ಯುಗಾದಿ - ದ.ರಾ. ಬೇಂದ್ರೆ	೬
೪.	ನನ್ನ ನಾಯಿ - ಪುತಿನ	೮
೫.	ಮುದ್ದಣ್ಣ ಮನೋರಮೆಯರ ಸಲ್ಲಾಪ - ಮುದ್ದಣ್ಣ	೧೨
೬.	ಪ್ರೀತಿ ಇಲ್ಲದ ಮೇಲೆ- ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ	೧೬
೭.	ಅಪ್ಪ - ಎನ್. ರವಿಕುಮಾರ	೧೭
೮.	ಸರ್ಕಸ್ ಹುಡುಗಿ- ಅಕ್ಷತಾ ಹುಂಚದ ಕಟ್ಟಿ	೧೯

ಭಾಗ-II ನಿರ್ವಹಣಾ ಕೌಶಲ : ಪ್ರವೇಶ

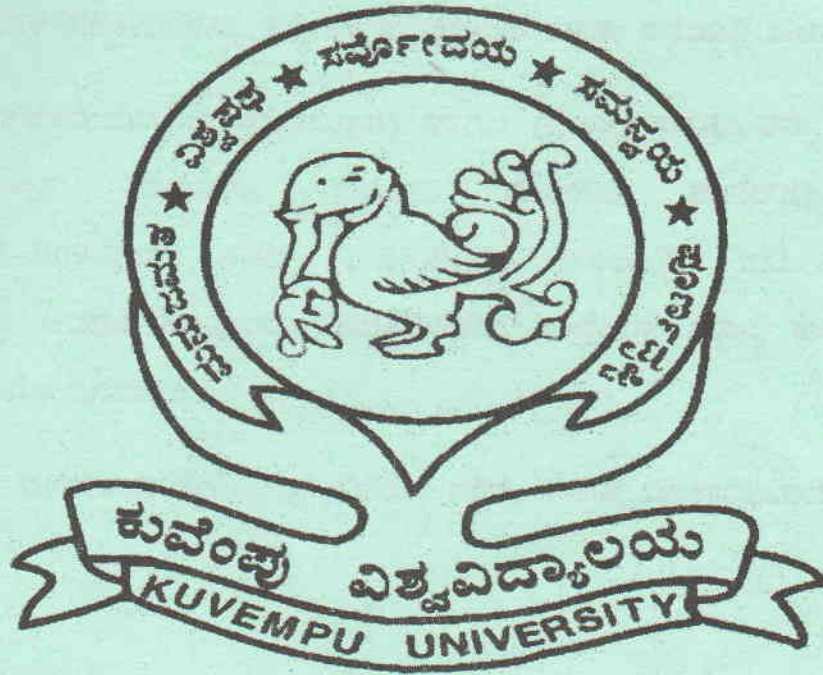
		೨೧
೧.	ವ್ಯವಹಾರ ಸಂವಹನ ಮತ್ತು ನಿರ್ವಹಣಾ ಕೌಶಲಗಳು: - ಲೇ : ಆರ್. ರಾಜೇಶ್ವರಿ	೨೨
೨.	ಆನ್‌ಲೈನ್ ಮಾರುಕಟ್ಟೆಯ ಕಷ್ಟ-ಸುಖ -ಯಶವಂತ ಡೋಂಗ್ರೆ	೩೩
೩.	ಆನ್‌ಲೈನ್ ಬ್ಯಾಂಕಿಂಗ್ ಲೇ : ಜೋಮನ್ ವರ್ಗಿಸ್	೩೮
೪.	ಮಾನಸಿಕ ಒತ್ತಡ ಮತ್ತು ನಿರ್ವಹಣೆ ಸಂಗ್ರಹ - ಡಾ. ಸಿ.ಆರ್. ಚಂದ್ರಶೇಖರ್	೪೫
೫.	ಅಪ್ಪ ಸಲಹೆಗಳು : ಡಾ. ಸಿ.ಆರ್. ಚಂದ್ರಶೇಖರ್	೫೨
೬.	ಯಾವ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲೂ ಉತ್ತರವಿಲ್ಲ : - ನೂತನ ಎಂ. ದೋಶೆಟ್ಟಿ	೫೬
೭.	ಆರ್ಟ್ ಆಫ್ ಲೈಯಿಂಗ್ : ನಟರಾಜ್ ಹುಳಿಯಾರ್	೬೩

ಭಾಗ-III ಸರ್ಕಾರಿ ಪತ್ರಗಳು

೧. ಪತ್ರಲೇಖನದ ಲಕ್ಷಣಗಳು, ಪತ್ರದ ಸ್ವರೂಪ-ವಿನ್ಯಾಸ	೭೫
೨. ಸರ್ಕಾರಿ ಪತ್ರದ ಬಗೆಗಳು	೮೨
೧. ಸರ್ಕಾರಿ / ಅಧಿಕೃತ ಪತ್ರಗಳು (ಅಫೀಷಿಯಲ್ ಲೆಟರ್)	೮೨
೨. ಅರೆ ಸರ್ಕಾರಿ ಪತ್ರಗಳು (ಸೆಮಿ ಅಫೀಷಿಯಲ್ ಲೆಟರ್)	೮೫
೩. ಜ್ಞಾಪನ ಪತ್ರ (ಮೆಮೊರಾಂಡಮ್)	೮೬
೪. ಸುತ್ತೋಲೆ / ಪರಿಪತ್ರ (ಸರ್ಕ್ಯೂಲರ್)	೮೮
೫. ಆದೇಶ / ನಡಾವಳಿಗಳು (ಅಫೀಷಿಯಲ್ ಪ್ರೊಸೀಜರ್)	೯೨
೬. ಅಧಿಸೂಚನೆ (ನೋಟಿಫಿಕೇಷನ್)	೯೬
೭. ಅರ್ಜಿ / ಅಭ್ಯರ್ಥನ ಪತ್ರ (ಅಪ್ಪಿಕೇಷನ್)	೯೮
೮. ಮನವಿಪತ್ರ (ರಿಕ್ವಿಜಿಷನ್)	೧೦೧

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ

ದಿನಾಂಕ:01-04-2019ರ ಯು.ಜಿ. ಬಿ.ಓ.ಎಸ್. ಸಭೆಯ ನಡವಳಿಗಳು



ಸ್ನಾತಕೋತ್ತರ ಹಿಂದಿ ಅಧ್ಯಯನ ಮತ್ತು ಸಂಶೋಧನಾ ವಿಭಾಗ

ಜ್ಞಾನ ಸಹ್ಯಾದ್ರಿ, ಶಂಕರಘಟ್ಟ-577451

ದಿನಾಂಕ:01-04-2019ರಂದು ಸ್ನಾತಕೋತ್ತರ ಹಿಂದಿ ಯು.ಜಿ. ಅಧ್ಯಯನ ಮಂಡಳಿ ಸಭೆಯ ನಡವಳಿಗಳು

ದಿನಾಂಕ:01-04-2019ರಂದು ಸ್ನಾತಕೋತ್ತರ ಹಿಂದಿ ಅಧ್ಯಯನ ವಿಭಾಗದಲ್ಲಿ ನಡೆದ ಸ್ನಾತಕ ಬಿ.ಓ.ಎಸ್. ಸಭೆಯು ಬೆಳಿಗ್ಗೆ 11-00ಘಂಟೆಗೆ ಪ್ರಾರಂಭವಾಯಿತು. ಅಧ್ಯಕ್ಷರಾದ ಡಾ.ಉಮಾ ಆರ್. ಹೆಗಡೆಯವರು ಸಭೆಗೆ ಹಾಜರಾದ ಸದಸ್ಯರನ್ನು ಸ್ವಾಗತಿಸುವ ಮೂಲಕ ಸಭೆ ಆರಂಭವಾಯಿತು, ಸಭೆಯಲ್ಲಿ ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯದ ಮಾನ್ಯ ಕುಲಸಚಿವರ ದಿನಾಂಕ:26-03-2019ರ ಪತ್ರದನುಸಾರ ಸ್ನಾತಕ ಪದವಿಗಳಲ್ಲಿನ ಭಾಷಾ ವಿಷಯಗಳ ಪಠ್ಯಕ್ರಮಗಳನ್ನು ಪ್ರತ್ಯೇಕಿಸಿ ಪರಿಷ್ಕರಿಸುವ ಕುರಿತು ಸಭೆಯಲ್ಲಿ ಚರ್ಚಿಸಲಾಯಿತು.

ಕಲಾ (ಬಿ.ಎ. ಪಠ್ಯಕ್ರಮವನ್ನು ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯೂ.ಗೆ) ಹಾಗೂ (ಬಿ.ಕಾಂ ಪಠ್ಯಕ್ರಮವನ್ನು ಬಿ.ಬಿ.ಎ. (ಟಿ.ಟಿ.ಎಂ) ಹಾಗೂ ವಿಜ್ಞಾನ (ಬಿ.ಎಸ್.ಸಿ., ಬಿ.ಸಿ.ಎ., ಬಿ.ಎಸ್.ಸಿ. ಹಾನರ್ಸ್‌ಗೆ) ಕೋರ್ಸ್‌ಗಳನ್ವಯ ದಿನಾಂಕ:04-01-2019ರಂದು ನಡೆದ ಪಿ.ಜಿ/ಯು.ಜಿ. (ಸಂಯುಕ್ತ) ಬಿ.ಓ.ಎಸ್. ಸಭೆಯಲ್ಲಿಯೇ ಪ್ರತ್ಯೇಕಿಸಲಾಗಿತ್ತು. ಆದರೂ ಕೆಲವೊಂದು ತಿದ್ದುಪಡಿಗಳನ್ನು ಉಲ್ಲೇಖಿತ ಮಾನ್ಯ ಕುಲಸಚಿವರ ಪತ್ರದನ್ವಯ ಪರಿಷ್ಕರಿಸಿ ಅನುಮೋದಿಸಲಾಯಿತು.

ಅಧ್ಯಕ್ಷರ ವಂದನಾರ್ಪಣೆಯೊಂದಿಗೆ ಸಭೆಯು ಸಂಜೆ. 5-30ಕ್ಕೆ ಮುಕ್ತಾಯವಾಯಿತು.

ಅಧ್ಯಕ್ಷರು.
CHAIRPERSON (B.O.S.)
H.D. Studies & Research in Hindi
University of Mysore
Mysore, Karnataka - 577451
Chimoga Dist., Karnataka.

ಕುವೆಂಪು  ವಿಶ್ವವಿದ್ಯಾಲಯ

ಪದವಿ ಕಾಲೇಜುಗಳ ನೂತನ ಹಿಂದಿ ಪಠ್ಯಕ್ರಮ (2019-20)

ಪ್ರಥಮ ಬಿ.ಎ/ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯು. ಮೊದಲನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ - 01

ಹಿಂದಿ ಗದ್ಯ ಸಾಹಿತ್ಯ ಮತ್ತು ವ್ಯಾಕರಣ

01. ಗದ್ಯ ಸಂಕಲನ: 'ಗದ್ಯ ಕೆ ವಿವಿಧ್ ರಂಗ್' ಸಂ:-ದೂದ್ ನಾಥ್ ಸಿನ್ಹ, ಸುಮಿತ್ರ ಪ್ರಕಾಶನ, ಅಲಹಾಬಾದ್
02. ಸಾಮಾನ್ಯ ನಿಬಂಧ: ಗಣಕ ಯಂತ್ರ, ರಾಷ್ಟ್ರಭಾಷಾ, ಪ್ರಕೃತಿ ಔರ್ ಪರ್ಯಾವರಣ್, ದೂರದರ್ಶನ, ಖೇಲ್ ಕಾ ಮಹತ್ವ ಮೆರಾ ಪ್ರಿಯ ಲೇಖಕ್.
03. ವ್ಯಾಕರಣ: ಸ್ವರ, ವ್ಯಂಜನ, ಶಬ್ದಭೇದ, ಸಂಧಿ, ಮತ್ತು ಪ್ರಕಾರಗಳು, ಸಂಜ್ಞ, ಲಿಂಗ, ವಚನ ಕಾರಕ್, ಸರ್ವನಾಮ ಮತ್ತು ವಿಶೇಷಣ,
04. ಸಂಕ್ಷಿಪ್ತೀಕರಣ್:

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಗದ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಕ್ಯ - 20 ಅಂಕಗಳು,
02. ಗದ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
03. ಸಾಮಾನ್ಯ ನಿಬಂಧ - 10 ಅಂಕಗಳು,
04. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು.
05. ಸಂಕ್ಷಿಪ್ತೀಕರಣ್ : - 10 ಅಂಕಗಳು

ಪ್ರಥಮ ಬಿ.ಎ/ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯು. ಎರಡನೇ ಸೆಮಿಸ್ಟರ್ ಪತ್ರಿಕೆ -2

ಹಿಂದಿ ಕಾವ್ಯ ಮತ್ತು ವ್ಯಾಕರಣ

01. ಕಾವ್ಯ ಸಂಕಲನ: 'ಪದ್ಯ ಮಂಜರಿ' ಸಂಪಾದಕರು: ನಿರ್ಮಲ ಎಸ್. ಮೋಹನ್, ರಾಜ್ ಕಮಲ್ ಪ್ರಕಾಶನ್, ದೆಹಲಿ.
02. ವ್ಯಾಕರಣ, ಕ್ರಿಯಾ, ಸಕರ್ಮಕ, ಅಕರ್ಮಕ, ಪೇರಣಾರ್ಥಕ ಕ್ರಿಯೆಗಳು, ವಾಚ್ಯ ಮತ್ತು ಕಾಲ, ಅವ್ಯಯಗಳು - ಕ್ರಿಯಾ ವಿಶೇಷಣ, ಸಂಬಂಧ ಬೋಧಕ, ಸಮುಚ್ಚಯ ಬೋಧಕ ಮತ್ತು ವಿಸ್ಮಯಾದಿ ಬೋಧಕ, ಸಮಾಸ, ಉಪಸರ್ಗ ಮತ್ತು ಪರಸರ್ಗ.

03. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಪದ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
02. ಪದ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
03. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ಪ್ರಶೋತ್ತರಗಳು - 20 ಅಂಕಗಳು,
04. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ವೈಕಲ್ಪಿಕ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು

ದ್ವಿತೀಯ ಬಿ.ಎ/ಬಿ.ಎಸ್.ಡಬ್ಲ್ಯು. ಮೂರನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ - 3

ಹಿಂದಿ ಕಥಾ ಸಾಹಿತ್ಯ ಮತ್ತು ಅನುವಾದ

01. ಕಹಾನಿ ಸಂಕಲನ: 'ಕಹಾನಿ ಸಂಕಲನ' ಸಂಪಾದಕರು: ಮೂಲಚಂದ್ ಗೌತಮ್, ರಾಜ್‌ಕಮಲ್ ಪ್ರಕಾಶನ್, ದೆಹಲಿ,
02. ಲಘು ಉಪನ್ಯಾಸ: 'ಅನ್ ದೇಖಿ ಅಂಜಾನ್ ಪುಲ್' ರಾಜೇಂದ್ರ ಯಾದವ್, ಪ್ರಕಾಶಕರು:ರಾಧಾಕೃಷ್ಣ ಪ್ರಕಾಶನ, ದಿಲ್ಲಿ.
03. ಅನುವಾದ (ಪ್ರಾಯೋಗಿಕ): ಇಂಗ್ಲೀಷ್/ಕನ್ನಡದಿಂದ ಹಿಂದಿಗೆ ಮತ್ತು ಹಿಂದಿ ಯಿಂದ ಕನ್ನಡ/ಇಂಗ್ಲೀಷಿಗೆ

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಕಹಾನಿ ಪಠ್ಯದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
02. ಕಹಾನಿ ಪಠ್ಯದಿಂದ ಟಿಪ್ಪಣಿ -10 ಅಂಕಗಳು,
03. ಲಘು ಉಪನ್ಯಾಸದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
04. ಲಘು ಉಪನ್ಯಾಸದಿಂದ ಟಿಪ್ಪಣಿ -10 ಅಂಕಗಳು
05. ಅನುವಾದ - 10 + 10. ಅಂಕಗಳು

ಹಿಂದಿ ನಾಟಕ ಸಾಹಿತ್ಯ ಮತ್ತು ಪ್ರಯೋಜನ ಮೂಲಕ ಹಿಂದಿ

01. ನಾಟಕ: 'ಬಿನಾ ದಿವಾರೋಂಕಿ ಘರ್' ಸಂಪಾದಕರು: ಮನ್ನು ಭಂಧಾರಿ, ರಾಧಾಕೃಷ್ಣ ಪ್ರಕಾಶನ, ದಿಲ್ಲಿ.
02. ಪ್ರಯೋಜನ ಮೂಲಕ ಹಿಂದಿ
 - ರಾಜಭಾಷಾ ಹಿಂದಿ, ರಾಷ್ಟ್ರಭಾಷಾ ಹಿಂದಿ, ಸಂಪರ್ಕ ಭಾಷಾ ಹಿಂದಿ, ಪ್ರಯೋಜನ ಮೂಲಕ ಹಿಂದಿ, ಆಲೇಖನ್, ಟಿಪ್ಪಣಿ, (ಲಘು ಟಿಪ್ಪಣಿ)
03. ಪತ್ರ ಲೇಖನ: ವಾಣಿಜ್ಯ ಪತ್ರಗಳು ಮತ್ತು ಸರ್ಕಾರಿ ಪತ್ರಗಳು
 1. ಸರ್ಕಾರಿ ಪತ್ರ :
ಸಾಮಾನ್ಯ ಸರ್ಕಾರಿ ಪತ್ರ, ಅರ್ಧ ಸರ್ಕಾರಿ ಪತ್ರ, ಕಾರ್ಯಾಲಯ ಜ್ಞಾಪನ, ಪರಿಪತ್ರ, ಕಾರ್ಯಾಲಯ ಆದೇಶ. ಅಧಿಸೂಚನ, ಅನುಸ್ಮಾರಕ
 2. ವಾಣಿಜ್ಯ ಪತ್ರ ಲೇಖನ:
ಪೂಜ್ ತಾಜ್ ಸಂಬಂಧಿ ಪತ್ರ, ಮಾಲ್ ಮಂಗಾನೆ ಸಂಬಂಧಿ ಪತ್ರ
ಏಜೆನ್ನಿ ಸಂಬಂಧಿ ಪತ್ರ, ಶಿಕಾಯತಿ ಪತ್ರ, ನೌಕರಿ ಸಂಬಂಧಿ ಪತ್ರ, ಬ್ಯಾಂಕ್ ಸಂಬಂಧಿ ಪತ್ರ

ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ:

01. ನಾಟಕ ಪಠ್ಯದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು
02. ನಾಟಕ ಪಠ್ಯದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
03. ಪತ್ರ ಲೇಖನ - 10 + 10=20
04. ಲಘು ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,

ಪ್ರಥಮ ಬಿ.ಕಾಂ/ಬಿ.ಬಿ.ಎ., ಬಿ.ಬಿ.ಎ(ಟಿ.ಟಿ.ಎಂ) ಮೊದಲನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ - 01

ಹಿಂದಿ ಕಾವ್ಯ ಮತ್ತು ವ್ಯಾಕರಣ

01. ಕಾವ್ಯ:- 'ಕುರಕ್ಷೇತ್ರ' ಮೈಥಿಲಿ ಶರಣಗುಪ್ತ, ಪ್ರಕಾಶನ:ಸಾಹಿತ್ಯ ಸದನ್, ಚಿರ್‌ಗಾವ್.
02. ವ್ಯಾಕರಣ: ಸ್ವರ, ವ್ಯಂಜನ, ಶಬ್ದಭೇದ, ಸಂಧಿ ಮತ್ತು ಅದರ ಪ್ರಕಾರಗಳು, ಸಂಜ್ಞಾ ಔರ್ ಪ್ರಕಾರ್, ಲಿಂಗ, ವಚನಕಾರಕ, ಸರ್ವನಾಮ ಮತ್ತು ವಿಶೇಷಣ

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಕಾವ್ಯ ಪಠ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
02. ಕಾವ್ಯ ಪಠ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
03. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ಪ್ರಶೋತ್ತರ - 20 ಅಂಕಗಳು,
04. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ವೈಕಲ್ಪಿಕ ಪ್ರಶೋತ್ತರಗಳು - 20 ಅಂಕಗಳು

ಪ್ರಥಮ ಬಿ.ಕಾಂ/ಬಿ.ಬಿ.ಎ., ಬಿ.ಬಿ.ಎ(ಟಿ.ಟಿ.ಎಂ) ಎರಡನೇ ಸೆಮಿಸ್ಟರ್ ಪತ್ರಿಕೆ - 2.

ಹಿಂದಿ ಗದ್ಯ ಸಾಹಿತ್ಯ ಮತ್ತು ವ್ಯಾಕರಣ

01. ಗದ್ಯ ಸಂಕಲನ: 'ಗದ್ಯ ಪುಲ್ಕಾರಿ' ಸಂಪಾದಕರು: ಡಾ.ಶಹಾಬುದ್ದೀನ್ ಶೇಖ್, ರಾಜ್‌ಪಾಲ್ ಪ್ರಕಾಶನ ದಿಲ್ಲಿ, (ರೇಖಾಚಿತ್ರ, ವ್ಯಂಗ್ಯ, ಸಂಸ್ಕರಣ, ಏಕಾಂಕಿ, ನಿಬಂಧ್, ಯಾತ್ರಾ ವರ್ಣನ್)
02. ಸಾಮಾನ್ಯ ನಿಬಂಧ: ಗಣಕ ಯಂತ್ರ, ರಾಷ್ಟ್ರಭಾಷಾ, ಪ್ರಕೃತಿ ಔರ್ ಪರ್ಯಾವರಣ್, ದೂರದರ್ಶನ್ ಖೇಲ್ ಕಾ ಮಹತ್ವ, ಮೆರಾ ಪ್ರಿಯ ಲೇಖಿಕ್.
03. ವ್ಯಾಕರಣ, ಕ್ರಿಯಾ, ಸಕರ್ಮಕ, ಅಕರ್ಮಕ, ಪ್ರೇರಣಾರ್ಥಕ ಕ್ರಿಯೆಗಳು, ಕಾಲ ಮತ್ತು ವಾಚ್ಯ ಅವ್ಯಯಗಳು - ಕ್ರಿಯಾ ವಿಶೇಷಣ, ಸಂಬಂಧಬೋಧಕ, ಸಮುಚ್ಚಯ ಬೋಧಕ ಮತ್ತು ವಿಸ್ಮಯಾಧಿ ಬೋಧಕ, ಸಮಾಸ, ಉಪಸರ್ಗ ಮತ್ತು ಪರಸರ್ಗ

ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಗದ್ಯಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
02. ಗದ್ಯಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
03. ಸಾಮಾನ್ಯ ನಿಬಂಧ - 10 ಅಂಕಗಳು,
04. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ಪ್ರಶೋತ್ತರಗಳು - 30 ಅಂಕಗಳು,

ದ್ವಿತೀಯ ಬಿ.ಕಾಂ/ಬಿ.ಬಿ.ಎ., ಬಿ.ಬಿ.ಎ(ಟಿ.ಟಿ.ಎಂ) ಮೂರನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ - 3

ಹಿಂದಿ ಏಕಾಂಕಿ ನಾಟಕ ಸಾಹಿತ್ಯ ಮತ್ತು ಅನುವಾದ

01. ಏಕಾಂಕಿ ಸಂಕಲನ: 'ಆಲ್ ಏಕಾಂಕಿ' ಸಂ: ದೇವೇಂದ್ರ ರಾಜ್ ಅಂಕುರ್ , ವಾಣಿ ಪ್ರಕಾಶನ್, ದಿಲ್ಲಿ,
02. ಅನುವಾದ (ಸೈದ್ಧಾಂತಿಕ): ಅನುವಾದ ಕಾ ಅರ್ಥ್ ಔರ್ ಪರಿಭಾಷಾ, ಅನುವಾದ್ ಕೀ ಪ್ರಕ್ರಿಯಾ, ಅನುವಾದ್ ಕೆ ಪ್ರಕಾರ್, ಅನುವಾದ್ ಕಿ ಸಮಸ್ಯಾಯೆ, ಸಾಹಿತ್ಯೇತರ ಅನುವಾದ, ಅನುವಾದಕ್ ಕೆ ಗುಣ್, ಅನುವಾದದ ಪ್ರಯೋಜನಗಳು.
03. ಅನುವಾದ (ಪ್ರಾಯೋಗಿಕ): ಕನ್ನಡ/ಇಂಗ್ಲೀಷ್‌ನಿಂದ ಹಿಂದಿಗೆ, ಹಿಂದಿಯಿಂದ ಕನ್ನಡ ಅಥವಾ ಇಂಗ್ಲೀಷ್‌ಗೆ ಅನುವಾದ.

ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಏಕಾಂಕಿ ಪಠ್ಯದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು
02. ಏಕಾಂಕಿ ಪಠ್ಯದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
03. ಅನುವಾದ ಸೈದ್ಧಾಂತಿಕ ಲಘು ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
04. ಅನುವಾದ ಪ್ರಾಯೋಗಿಕ - 10 + 10 ಅಂಕಗಳು.

ಪತ್ರಿಕೆ -4

○ ಹಿಂದಿ ಕಥಾ ಸಾಹಿತ್ಯ ಮತ್ತು ಪತ್ರ ಲೇಖನ

01. ಕಹಾನಿ ಸಂಕಲನ: 'ಕಥಾ ಭೂಮಿ' ಸಂಚಿತ್ತರಂಜನ್ ಮಿಶ್ರ, ರಾಧಾಕೃಷ್ಣ ಪ್ರಕಾಶನ, ದಿಲ್ಲಿ.
02. ಲಘು ಉಪನ್ಯಾಸ: 'ರುಕೋಗೀ ನಹಿ ರಾಧಿಕ' ಲೇಖಕರು: ಉಷಾ ಪ್ರಿಯಂವದ, ರಾಜ್‌ಕಮಲ್ ಪ್ರಕಾಶನ, ಹೊಸ ದೆಹಲಿ,

03. ಪತ್ರ ಲೇಖನ -

1. ಸರ್ಕಾರಿ ಪತ್ರ :

ಸಾಮಾನ್ಯ ಸರ್ಕಾರಿ ಪತ್ರ: ಅರ್ಧ ಸರ್ಕಾರಿ ಪತ್ರ, ಕಾರ್ಯಾಲಯ ಜ್ಞಾಪನ, ಪರಿಪತ್ರ, ಕಾರ್ಯಾಲಯ ಆದೇಶ. ಅಧಿಸೂಚನ, ಅನುಸ್ಮಾರಕ್

2. ವಾಣಿಜ್ಯ ಪತ್ರ ಲೇಖನ:

ಪೂಜ್ ತಾಜ್ ಸಂಬಂಧಿ ಪತ್ರ, ಮಾಲ್ ಮಂಗಾನೆ ಸಂಬಂಧಿ ಪತ್ರ

ಏಜೆನ್ಸಿ ಸಂಬಂಧಿ ಪತ್ರ, ಶಿಕಾಯತಿ ಪತ್ರ, ನೌಕರಿ ಸಂಬಂಧಿ ಪತ್ರ, ಬ್ಯಾಂಕ್ ಸಂಬಂಧಿ ಪತ್ರ

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಕಹಾನಿ ಪಠ್ಯದಿಂದ ಧೀರ್ಘ ಪ್ರಶ್ನೆ ಮತ್ತು ಟಿಪ್ಪಣಿಗಳು - 30 ಅಂಕಗಳು(20+10)
02. ಉಪನ್ಯಾಸ ಪಠ್ಯದಿಂದ ದೀರ್ಘ ಪ್ರಶ್ನೆ ಮತ್ತು ಟಿಪ್ಪಣಿಗಳು -30 ಅಂಕಗಳು,(20+10)
03. ಪತ್ರ ಲೇಖನ - 10 + 10,

ಪತ್ರಿಕೆ-1

ಹಿಂದಿ ಗದ್ಯ ಸಾಹಿತ್ಯ ಮತ್ತು ವ್ಯಾಕರಣ

01. ಗದ್ಯ ಸಂಕಲನ: 'ನೂತನ ಗದ್ಯ ಸಂಗ್ರಹ' ಸಂಪಾದಕರು: ಜಯಪ್ರಕಾಶ, ಸುಮಿತ್ರ ಪ್ರಕಾಶನ, ಅಲಹಾಬಾದ್,
02. ಸಾಮಾನ್ಯ ನಿಬಂಧ: ಗಣಕ ಯಂತ್ರ, ರಾಷ್ಟ್ರಭಾಷಾ, ಪ್ರಕೃತಿ ಔರ್ ಪರ್ಯಾವರಣ್, ದೂರದರ್ಶನ, ಖೇಲ್ ಕಾ ಮಹತ್ವ ಮೆರಾ ಪ್ರಿಯ ಲೇಖಕ.
03. ವ್ಯಾಕರಣ: ಸ್ವರ, ವ್ಯಂಜನ, ಶಬ್ದಭೇದ, ಸಂಧಿ, ಸಂಜ್ಞಾ ಔರ್ ಪ್ರಕಾರ್, ಲಿಂಗ, ವಚನ ಕಾರಕ, ಸರ್ವನಾಮ ಮತ್ತು ವಿಶೇಷಣ

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಗದ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
02. ಗದ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು -20 ಅಂಕಗಳು,
03. ಸಾಮಾನ್ಯ ನಿಬಂಧ - 10 ಅಂಕಗಳು,
04. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ಪ್ರಶೋತ್ತರಗಳು - 30 ಅಂಕಗಳು,

ಪ್ರಥಮ ಬಿ.ಎಸ್.ಸಿ./ಬಿ.ಸಿ.ಎ./ಬಿ.ಎಸ್.ಸಿ.(ಹಾನರ್ಸ್) ಎರಡನೇ ಸೆಮಿಸ್ಟರ್ ಪತ್ರಿಕೆ - 2,

ಹಿಂದಿ ಕಾವ್ಯ ಮತ್ತು ವ್ಯಾಕರಣ

01. ಕಾವ್ಯ ಸಂಕಲನ: 'ಹಿಂದಿ ಕಾವ್ಯ ಸಂಗ್ರಹ' ಸಂಪಾದಕರು: ಶಶಿಶೇಖರ್ ತಿವಾರಿ, ವಾಣಿ ಪ್ರಕಾಶನ. ನಯಿ ದಿಲ್ಲಿ, (ಕಬೀರ್ ದಾಸ್, ಸೂರ್‌ದಾಸ್, ತುಳಸೀದಾಸ್, ಜಯ್‌ಶಂಕರ್ ಪ್ರಸಾದ್, ನಿರಾಲ, ದಿನ್‌ಕರ್, ನಾಗಾರ್ಜುನ್)
02. ವ್ಯಾಕರಣ - ಕ್ರಿಯಾ-ಸಕರ್ಮಕ್ ಔರ್ ಅಕರ್ಮಕ್ ಕ್ರಿಯಾ, ಪ್ರೇರಣಾರ್ಥಕ ಕ್ರಿಯೆಗಳು, ವಾಚ್ಯ, ಕಾಲ, ಅವ್ಯಯಗಳು - ಕ್ರಿಯಾ ವಿಶೇಷಣ, ಸಂಬಂಧ ಬೋಧಕ, ಸಮುಚ್ಚಯ ಬೋಧಕ ಮತ್ತು ವಿಸ್ಮಯಾದಿ ಬೋಧಕ, ಸಮಾಸ, ಉಪಸರ್ಗ ಮತ್ತು ಪರಸರ್ಗ.

ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಪದ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
02. ಪದ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
03. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ಪ್ರಶೋತ್ತರಗಳು - 20 ಅಂಕಗಳು,
04. ವ್ಯಾಕರಣ ಭಾಗದಿಂದ ವೈಕಲ್ಪಿಕ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು

ಪತ್ರಿಕೆ -3

ಹಿಂದಿ ಕಥಾ ಸಾಹಿತ್ಯ ಮತ್ತು ಅನುವಾದ

01. ಕಹಾನಿ ಸಂಕಲನ: 'ಅಭಿನವ ಕಥಾ ಭಾರತಿ' ಸಂ:ಚಕ್ರಧರ್, ಸುಮಿತ್ರಾ ಪ್ರಕಾಶನ್, ಇಲಹಾಬಾದ್,
02. ಅನುವಾದ (ಸೈದ್ಧಾಂತಿಕ): ಅನುವಾದ ಕಾ ಅರ್ಥ್ ಔರ್ ಪರಿಭಾಷೆ, ಅನುವಾದ್ ಕೀ ಪ್ರಕ್ರಿಯಾ, ಅನುವಾದದ ಪ್ರಕಾರಗಳು, ಅನುವಾದದ ಸಮಸ್ಯೆಗಳು, ಸಾಹಿತ್ಯೇತರ ಅನುವಾದ, ಅನುವಾದಕನ ಗುಣ, ಅನುವಾದದ ಉಪಯೋಗಿತ.
03. ಅನುವಾದ (ಪ್ರಾಯೋಗಿಕ): ಕನ್ನಡ/ಇಂಗ್ಲೀಷ್‌ನಿಂದ ಹಿಂದಿಗೆ, ಹಿಂದಿಯಿಂದ ಕನ್ನಡ ಅಥವಾ ಇಂಗ್ಲೀಷ್‌ಗೆ

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಕಹಾನಿ ಸಾಹಿತ್ಯ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
02. ಕಹಾನಿ ಪಠ್ಯದಿಂದ ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
03. ಅನುವಾದ ಸೈದ್ಧಾಂತಿಕ ಲಘು ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
04. ಅನುವಾದ ಪ್ರಾಯೋಗಿಕ - 10 + 10 ಅಂಕಗಳು.

ದ್ವಿತೀಯ ಬಿ.ಎಸ್.ಸಿ./ಬಿ.ಸಿ.ಎ./ಬಿ.ಎಸ್.ಸಿ.(ಹಾನರ್ಸ್) ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ-4

ಹಿಂದಿ ನಾಟಕ ಸಾಹಿತ್ಯ ಮತ್ತು ಪತ್ರ ಲೇಖನ

01. ಏಕಾಂಕಿ ಸಂಕಲನ: 'ಏಕಾಂಕಿ ಕುಂಜ್' ಸಂ: ಡಾ.ಉಮೇಶ್‌ಚಂದ್ರ್ ಮಿಶ್ರ್ 'ಶಿವ', ಜಯಭಾರತಿ ಪ್ರಕಾಶನ, .

02. ಪತ್ರ ಲೇಖನ

1. ಸರ್ಕಾರಿ ಪತ್ರ :

ಸಾಮಾನ್ಯ ಸರ್ಕಾರಿ ಪತ್ರ, ಅರೆ ಸರ್ಕಾರಿ ಪತ್ರ, ಕಾರ್ಯಾಲಯ ಜ್ಞಾಪನ, ಪರಿಪತ್ರ

2. ವಾಣಿಜ್ಯ ಪತ್ರ ಲೇಖನ:

ಪೂಜ್ ತಾಜ್ ಸಂಬಂಧಿ ಪತ್ರ, ಮಾಲ್ ಮಂಗಾನೆ ಸಂಬಂಧಿ ಪತ್ರ, ಏಜೆನ್ಸಿ ಸಂಬಂಧಿ ಪತ್ರ, ಶಿಕಾಯತಿ ಪತ್ರ, ಬ್ಯಾಂಕ್ ಸಂಬಂಧಿ ಪತ್ರ (ಪ್ರಾಯೋಗಿಕ ಪತ್ರ)

ಪಾರಿಭಾಷಿಕ ಶಬ್ದಗಳ ಅಧ್ಯಯನ - ಹಿಂದಿ/ಇಂಗ್ಲೀಷ್ (100ರಿಂದ 150ಶಬ್ದಗಳು)

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಏಕಾಂಕಿ ಪಠ್ಯದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆಗಳು - 20 ಅಂಕಗಳು,
02. ಏಕಾಂಕಿ ಪಠ್ಯದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
03. ಪತ್ರ ಲೇಖನ - 10 + 10,
04. ಪಾರಿಭಾಷಿಕ ಶಬ್ದಗಳು - 20 ಅಂಕಗಳು.(10+10)

ಬಿ.ಎ. ಐಚ್ಛಿಕ ಪ್ರಥಮ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ - 1

ಪ್ರಾಚೀನ ಮತ್ತು ಮಧ್ಯಕಾಲೀನ ಹಿಂದಿ ಕಾವ್ಯ ಹಾಗೂ ಹಿಂದಿ ಸಾಹಿತ್ಯ ಕಾ ಇತಿಹಾಸ

01. ಸಾಹಿತ್ಯ ಇತಿಹಾಸ - ಹಿಂದಿ ಸಾಹಿತ್ಯ ಇತಿಹಾಸ ಕಾಲ ವಿಭಜನೆ ಮತ್ತು ನಾಮಕರಣ, ಹಿಂದಿ ಸಾಹಿತ್ಯದ ಪ್ರಮುಖ ಇತಿಹಾಸಕಾರರು, ಆದಿಕಾಲದ ಪ್ರಮುಖ ಪ್ರವೃತ್ತಿಗಳು, ಪ್ರಮುಖ ಕವಿಗಳು ಮತ್ತು ರಚನೆಗಳು, ಪೃಥ್ವಿರಾಜರಾಸೋ, ಭಕ್ತಿಕಾಲ, ಭಕ್ತಿಕಾಲದ ಸಾಮಾಜಿಕ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಾಂಸ್ಕೃತಿಕ ಸ್ಥಿತಿಗಳು, ಸಂತ ಸಾಹಿತ್ಯ, ಸಗುಣ-ನಿರ್ಗುಣ ಸಾಹಿತ್ಯ, ರಾಮ ಭಕ್ತಿ - ಕೃಷ್ಣಭಕ್ತಿ ಸಾಹಿತ್ಯ, ಕಬೀರ್, ತುಳಸಿ, ಮತ್ತು ಸೂರ್‌ದಾಸ, ರೀತಿಕಾಲ, ಪ್ರಮುಖ ಪ್ರವೃತ್ತಿಗಳು, ಕೇಶವ್, ಬಿಹಾರಿ.
02. ಕಾವ್ಯ ಪಠ್ಯಭಾಗ: 'ಪ್ರಾಚೀನ ಏವಂ ಮಧ್ಯಕಾಲೀನ್ ಕಾವ್ಯ ಭಾರತಿ' ಸಂ: ಯೋಗೇಂದ್ರ ಪ್ರತಾಪ್ ಸಿಂಹ, ಪ್ರ:ಲೋಕ್‌ಭಾರತಿ ಪ್ರಕಾಶನ, ಅಲಹಾಬಾದ್. (ಚಂದ್ರ ಬರದಾಯಿ, ಕಬೀರ್ ದಾಸ್-10ಂದ 25) ದೋಹೆ, ಸೂರ್‌ದಾಸ್-ವಂದನಾ, ಘಟನೋ ಚಲನಾ, ಭ್ರಮರ್ ಗೀತ್ ಪ್ರಸಂಗ್, ಬಿಹಾರಿ (10ಂದ 25) ಮಹಾಕವಿ ಭೂಷಣ್

ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ.

01. ಇತಿಹಾಸ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
02. ಇತಿಹಾಸ ಭಾಗದಿಂದ ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
03. ಕಾವ್ಯ ಪಠ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
04. ಕಾವ್ಯ ಪಠ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು

ಬಿ.ಎ. ಐಚ್ಛಿಕ ದ್ವಿತೀಯ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ - 2

ಆಧುನಿಕ ಹಿಂದಿ ಕಾವ್ಯ ಮತ್ತು ಗದ್ಯ ಸಾಹಿತ್ಯ

01. ಸಾಹಿತ್ಯ ಇತಿಹಾಸ- ಆಧುನಿಕ ಕಾವ್ಯ ಆರಂಭ ಮತ್ತು ವಿಕಾಸ, ಭಾರತೇಂದುಯುಗ, ದ್ವಿವೇದಿ ಯುಗ, ಛಾಯಾವಾದಿ ಕಾವ್ಯ, ಪ್ರಗತಿವಾದಿ ಕಾವ್ಯ, ಪ್ರಯೋಗವಾದಿ ಕಾವ್ಯ, ನಯ ಕವಿತೆ ಮತ್ತು ಸಾಂಪ್ರದಾಯಿಕ ಕವಿತೆ ಪ್ರಮುಖ ಪ್ರವೃತ್ತಿಗಳು, ಪ್ರಮುಖ ಕವಿಗಳು ಮತ್ತು ರಚನೆಗಳು.

02. ಕಾವ್ಯ ಪಠ್ಯ ಭಾಗ:- 'ಸಾಹಿತ್ಯ ಧಾರಾ: ಕಾವ್ಯ ಸಂಗ್ರಹ' ಸಂ:ಸುರೇಶ್ ಬಾಬರ್, ಪ್ರಕಾಶಕರು: ಜಗದ್ ಭಾರತಿ ಪ್ರಕಾಶನ, ಇಲಹಾಬಾದ್, (ಮೈಥಿಲಿ ಶರಣ್ ಗುಪ್ತ, ಜಯಶಂಕರ್ ಪ್ರಸಾದ್, ಸುಮಿತ್ರಾನಂದನ್ ಪಂಥ್, ನಿರಾಲ, ಹರಿವಂಶರ್‌ರಾಯ್ ಬಚ್ಚನ್, ರಾಮ್ ಧಾರಿ ಸಿನ್ಹ ದಿನಕರ್, ನಾಗಾರ್ಜುನ್, ಅಜ್ಜೇಯ) ಜಗದ್‌ಭಾರತಿ ಪ್ರಕಾಶನ,

03. ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಇತಿಹಾಸ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
02. ಇತಿಹಾಸ ಭಾಗದಿಂದ ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
03. ಕಾವ್ಯ ಪಠ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
04. ಕಾವ್ಯ ಪಠ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು

ಬಿ.ಎ. ಐಚ್ಛಿಕ ಮೂರನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ - 3

ಹಿಂದಿ ಕಥಾ ಸಾಹಿತ್ಯ

01. ಸಾಹಿತ್ಯ ಇತಿಹಾಸ - ಹಿಂದಿ ಕಹಾನಿ ಸಾಹಿತ್ಯ ಉಗಮ ಮತ್ತು ವಿಕಾಸ, ಪ್ರೇಮ್‌ಚಂದ್ ಪೂರ್ವಯುಗ, ಪ್ರೇಮ್‌ಚಂದ್ ಯುಗ, ಪ್ರೇಮ್‌ಚಂದೋತ್ತರ ಯುಗ, ನಯಿ ಕಹಾನಿ, ಸಮಕಾಲೀನ ಕಹಾನಿ ಸಾಹಿತ್ಯ, ಪ್ರಮುಖ ಕಹಾನಿಕಾರರು ಮತ್ತು ರಚನೆಗಳು, ಹಿಂದಿ ಉಪನ್ಯಾಸ ಸಾಹಿತ್ಯ ಆರಂಭ ಮತ್ತು ವಿಕಾಸ, ಪ್ರೇಮ್‌ಚಂದ್ ಪೂರ್ವಯುಗ, ಪ್ರೇಮ್‌ಚಂದ್ ಯುಗ, ಪ್ರೇಮ್‌ಚಂದೋತ್ತರ ಯುಗ, ಸಮಕಾಲೀನ ಉಪನ್ಯಾಸ ಸಾಹಿತ್ಯ ಪ್ರಮುಖ ಉಪನ್ಯಾಸಕರು ಮತ್ತು ರಚನೆಗಳು.
02. ಕಥಾ ಪಠ್ಯ ಭಾಗ:- 'ಸಮಕಾಲೀನ್ ಹಿಂದಿ ಕಹಾನಿಯೆ' ಸಂ: ಹಿಂದಿ ಅಧ್ಯಯನ್ ಮಂಡಲ್, ಮುಂಬೈ ಪ್ರ: ರಾಧಾಕೃಷ್ಣ ಪ್ರಕಾಶನ್, ನಯಿದಿಲ್ಲಿ.
03. ಉಪನ್ಯಾಸ: 'ಸಮೋಂಕಿ ಹೋಂ ಡೆಲಿವರಿ', ಸಂಪಾದಕರು: ಮಮತಾ ಕಾಲಿಯ, ಲೋಕಭಾರತಿ ಪ್ರಕಾಶನ, ಅಲಹಾಬಾದ್,

ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಇತಿಹಾಸ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
02. ಇತಿಹಾಸ ಭಾಗದಿಂದ ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
03. ಕಥಾ ಪಠ್ಯ ಭಾಗದಿಂದ ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
04. ಕಥಾ ಪಠ್ಯ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,

ಆಧುನಿಕ ನಾಟಕ ಮತ್ತು ಏಕಾಂಕಿ ಸಾಹಿತ್ಯ

01. ಸಾಹಿತ್ಯ ಇತಿಹಾಸ - ಹಿಂದಿ ನಾಟಕ ಸಾಹಿತ್ಯ ಉಗಮ ಮತ್ತು ವಿಕಾಸ, ಪ್ರಸಾದ ಪೂರ್ವಯು ಪ್ರಸಾದ್ ಯುಗ, ಪ್ರಸಾದೋತ್ತರ ಯುಗ, ಸಾಮಾಜಿಕ ನಾಟಕ ಪರಂಪರೆ, ಸಮಕಾಲೀನ ನಾಟಕ ಸಾಹಿತ್ಯ, ಪ್ರಮುಖ ನಾಟಕಕಾರರು, ಮತ್ತು ರಚನೆಗಳು, ಹಿಂದಿ ಏಕಾಂಕಿ ನಾಟಕ ಸಾಹಿತ್ಯ ಉಗಮ ಮತ್ತು ವಿಕಾಸ, ಪ್ರಮುಖ ಏಕಾಂಕಿಕಾರರು ಮತ್ತು ರಚನೆಗಳು.
02. ಏಕಾಂಕಿ ಪಠ್ಯ ಭಾಗ:- 'ಏಕಾಂಕಿ ಸಪ್ತಕ' ಸಂ:ಚಂಪಾ ಶ್ರೀವಾಸ್ತವ, ಲೋಕಭಾರತಿ ಪ್ರಕಾಶನ ಅಲಹಾಬಾದ್,
03. ನಾಟಕ: 'ತಾಜ್ ಮಹಲ್ ಕಾ ಟೆಂಡರ್' ಅಜೈ ಶುಕ್ಲ, ಕಮಲ್ ಪ್ರಕಾಶನ, ದಿಲ್ಲಿ.

ಪ್ರಶ್ನೆಪತ್ರಿಕೆ ಮಾದರಿ:

01. ಇತಿಹಾಸ ಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು,
02. ಇತಿಹಾಸ ಭಾಗದಿಂದ ಟಿಪ್ಪಣಿಗಳು - 20 ಅಂಕಗಳು,
03. ನಾಟಕ ಪಠ್ಯ ಭಾಗದಿಂದ ಸಪ್ರಸಂಗ್ ವ್ಯಾಖ್ಯೆ - 20 ಅಂಕಗಳು,
04. ನಾಟಕ ಪಠ್ಯಭಾಗದಿಂದ ದೀರ್ಘ ಉತ್ತರದ ಪ್ರಶ್ನೆಗಳು - 20 ಅಂಕಗಳು

ಐಚ್ಛಿಕ ಬಿ.ಎ. ಐದನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ 5

ಪ್ರಯೋಜನ ಮೂಲಕ ಹಿಂದಿ ಮತ್ತು ಪತ್ರ ವ್ಯವಹಾರ

ಪಠ್ಯಕ್ರಮ ಬದಲಾವಣೆ ಇಲ್ಲ

ಐಚ್ಛಿಕ ಬಿ.ಎ. ಐದನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ 6

ಹಿಂದಿ ಅನುವಾದ ಸಿದ್ಧಾಂತ ಮತ್ತು ಪ್ರಯೋಗ

ಪಠ್ಯಕ್ರಮ ಬದಲಾವಣೆ ಇಲ್ಲ

ಐಚ್ಛಿಕ ಬಿ.ಎ. ಆರನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ 7

ಹಿಂದಿ ಭಾಷಾ ವಿಜ್ಞಾನ

ಪಠ್ಯಕ್ರಮ ಬದಲಾವಣೆ ಇಲ್ಲ

ಐಚ್ಛಿಕ ಬಿ.ಎ. ಆರನೇ ಸೆಮಿಸ್ಟರ್

ಪತ್ರಿಕೆ 8

ಹಿಂದಿ ಭಾಷಾ ಇತಿಹಾಸ

ಪಠ್ಯಕ್ರಮ ಬದಲಾವಣೆ ಇಲ್ಲ

ವಿನಾಂಕ:01-04 -2019ರಂದು ನಡೆದ ಸ್ನಾತಕ ಹಿಂದಿ ಅಧ್ಯಯನ ಮಂಡಲಿ ಸಭೆಯಲ್ಲಿ ಹಾಜರಿದ್ದ ಸಭ್ಯರು
ಹಾಜರಿದ್ದ ಸಭ್ಯರು:

ಕ್ರ.ಸಂ.	ಅಧ್ಯಕ್ಷರು	ಸಹಿ
01	ಡಾ. ಉಮಾ ಆರ್. ಹೆಗಡೆ ಸ್ನಾತಕೋತ್ತರ ಹಿಂದಿ ಅಧ್ಯಯನ ಮತ್ತು ಸಂಶೋಧನಾ ವಿಭಾಗ, ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಜ್ಞಾನ ಸಹ್ಯಾದ್ರಿ	1/4/19
	ಸಭ್ಯರು	
03	ಶ್ರೀ ಎ.ವಿ.ಪದ್ಮನಾಭ, ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ಹಿಂದಿ ವಿಭಾಗ, ಡಿ.ವಿ.ಎಸ್. ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ ಕಾಲೇಜು, ಶಿವಮೊಗ್ಗ	Renella Av 1/4/19
04	ಡಾ. ಹಸನ್ ಖಾನ್ ಕೆ. ಕುಲಕರ್ಣಿ, ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು, ಹಿಂದಿ ವಿಭಾಗ, ಶ್ರೀಮತಿ ಇಂದಿರಾಗಾಂಧಿ ಪ್ರಥಮದರ್ಜೆ ಕಾಲೇಜು, ಸಾಗರ	H. Khan 1-4-2019
05	ಡಾ.ಆರ್. ಪ್ರಕಾಶ್, ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕರು, ಹಿಂದಿ ವಿಭಾಗ, ಎಸ್.ಟಿ.ಜೆ. ಮಹಿಳಾ ಪದವಿ ಕಾಲೇಜು, ಚಿಕ್ಕಮಗಳೂರು	Prakash 1/4/19

ಅಧ್ಯಕ್ಷರು(ಬಿ.ಓ.ಎಸ್.)
Hindi
1251

Kuvempu University
UG Department of Sanskrit

BA & BSW : SANSKRIT LANGUAGE (2019-20 onwards)

I - Semester

Paper I – Group I: Q. P. code: 10102 – SAA//SWA 020

- Title of the Course: Selected Gadya & Padya Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Gadya Kavya, Padya Kavya and Grammar.

Part I: Padya (poetry) Kavya: Buddacharitam of Ashwaghosha - 3rd Canto

- Origin and Development of Sanskrit poetry
- Definition of Mahakavya
- Date, place, works and style of Ashwaghosha
- 3rd Canto of Buddacharitam

Part II: Gadya (prose) Kavya: Mitrasamprapthi– Panchatantram

- Origin and Development of Kathasahitya
- Vishnusharma and Back ground of Panchatantra Story
- Story of Mitrasamprapthi in Panchatantra

Part III Grammar:

- Noun, Swara Sandhi, Krudantavyaya, Verbs (Lat. Lrut)
- Comprehension

Texts and Reference Books:

- * Buddacharitam - Chawkamba Vidyabhavan, Varanasi.
- * Sanskrita Sahitya Ratnakara
- * Panchatantram –Gokuladas Gupta, Chawkamba Varanasi
- * Sanskrit Grammer: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Joshi
- * Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.
- * Bhasha shatra
- * Katha sahitya

BA/BSW : SANSKRIT LANGUAGE

II - Semester (2019-20 onwards)

Paper II – Group II: Q. P. code: 10202 – SAB/SWB 020

- Title of the Course: Selected Gadya Kavya, Padya Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80
- 1. Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Gadya Kavya, Padya Kavya of different authors and Grammar.

Part I: Padya (poetry) Kavya: Neetishatakam of Bhartrihari (Selected 40 Shlokas)

- Origin and Development of Subhashitani.
- Date, place, works and style of Bhartrihari
- Neetishatakam of Bhartrihari (Selected 40 Shlokas)

Part II: Gadya (prose) Kavya: Somadatta Charitam of Dashakumar Charitam

- Origin and Development of Sanskrit Gadya Sahitya
- Importance of Gadyam Kavya.
- Date, place, works and style of Dandi Kavi.
- Story of Somadatta Charitam

Part III Grammar:

- Sarvanama, Vyanjana & Visarga Sandhi, Krudantavyaya, Verbs (Lot. Lung)
- Construction of Sanskrit Questions from given passages.

Texts and Reference Books:

- Bhartrihari's Shatakatriyam, P. V. Kane Pune.
- Samskrita Sahitya Ratnakara
- Sanskrit Grammer: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Joshi
- Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.

(3)

BA/BSW : SANSKRIT LANGUAGE

III - Semester (2020 onwards)

Paper III – Group III: Q. P. code: 10302 – SAC/SWC 020

- Title of the Course: Selected Drama & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80
- Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Drama and Grammar.

Part I: Drama: Abhijnana Shakuntalam of Kalidasa

- Origin and Development of Sanskrit Drama.
- Date, place, works and style of Kalidasa
- Difference between original story and changes made by Kalidasa in Abhijnana Shakuntala
- Story of Abhijnana Shakuntalam of Kalidasa – 4, 5, 6 Acts

Part II: Translation Sanskrit Passages (Sanskrit to Kannada or English)

Part III Grammar:

- 1) Samasas 2) Tadditas 3) Synonyms (Paryayapada) 4) Nijanta/Sannanta

Texts and Reference Books:

- Kalidasa's Abhijnanashakuntalam- PV Kane, Pune
- Abhijnanashakuntalam - Chawkamba Varanasi
- Samskruta Natakagalu
- Bharata's Natyashastra
- Dhasharopaka of Dhananjaya
- Sanskrit Grammer: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Johi,
- Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.

BA/BSW : SANSKRIT LANGUAGE

IV - Semester (2020 onwards)

Paper IV – Group IV: Q. P. code: 10402 – SADSWD 020

- Title of the Course: Selected Champu Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80
- Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Champu Kavyas and Selected Grammar.

Part I: Champu Kavya: Champu Bharatam- Draupadi Swayamvaram

- Origin and Development of Sanskrit Champu Kavyas.
- Pancha Champu Kavyas.
- Date, place, works and style of Annambhatta
- Story of Champu Bharatam – Draupadi Swayamvaram

Part II: Translation and Sanskrit question and Answers

Part III Grammar: Changes in Kartari/Karmani Prayogas , Doshan Pariharata

1. Selected Chandas (Anustub, Indravajra, Upendravajra, Vasantatilaka)
2. Selected Alankaras (Upama, Roopaka, Utpreksha, Atishayokti) 2

Texts and Reference Books:

- Champu Bharatam - Chawkamba Varanasi
- Sanskarita Kavya Sudha
- Sanskrit Grammer: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Johi,
- Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.

5

B.Com/BBA/BBA (TTM): SANSKRIT LANGUAGE

I - Semester : (2019-20 onwards)

Paper I – Group I: Q. P. code: 13102/ –11102 SCA/SBA 020

- Title of the Course: Selected Padya Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Padya Kavya and Grammar.

Part I: Padya (poetry) Kavya: Raghuvamsha of Kalidasa – First Canto

- Origin and Development of Sanskrit poetry
- Definition of Mahakavya
- Date, place, works and style of Kalidasa
- Story of First Canto of Raghuvamsha Kavya

Part II Grammer:

- Noun, Swara Sandhi, Krudantavyaya, Verbs (Lat. Lrut), Vyakarana Vishesha
- Comprehension and Expansion of Sanskrit Suktis

Texts and Reference Books:

- * Raghuvamsha Mahakavyam of Kalidasa, Chawkamba Vidyabhavan, Varanasi
- * Raghuvamsha of Kalidasa, M. R. Kale, Motilal Banarasidas
- * Sanskrit Grammar: Higher Sanskrit Grammar, M. R. Kale, Motilal Banarsidass.
- * Sanskrit Grammar: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Joshi
- * Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.

B.Com/BBA/BBA(TTM): SANSKRIT LANGUAGE

II - Semester : (2019-20 onwards)

Paper II – Group I: Q. P. code: 13202/ –11202 SCB/SBB 020

- Title of the Course: Selected Gadya Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Gadya Kavya and Grammar.

Part I: Gadya (prose): Rajavahana Charitam – Dandi's Dashakumar Charitam

- Origin and Development of Sanskrit Gadya Sahitya
- Importance of Gadya Kavya.
- Date, place, works and style of Dandi Kavi.
- Story of Rajavahana Charitam

Part II: Samskruta Vanijyam:

- Letter Writing – Vaiyaktika & Sarvajanika
- Story Writing – Selected Panchatantra Stories
- Report Writing

Part III Grammar:

- Sarvanama, Vyanjana & Visarga Sandhi, Krudantavyaya, Verbs (Lot. Lang), Vakya Shudhi

Texts and Reference Books:

- Dashakumarecharatam - Chawkamba Varanasi
- Samskruta Vanijyam – Prasaranga Mysore University
- Pnchatantra Katha – H. R. Vishwas, Samkruta Bharati
- Sanskrit Grammer: Higher Sanskrit Grammar, M. R. Kale, Motilal Banarsidass.
- Sanskrit Grammer: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Joshi
- Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.

2

B.Com/BBA/BBA(TTM): SANSKRIT LANGUAGE

III - Semester : (2020 onwards)

Paper III – Group I: Q. P. code: 13302/ –11302 SCC/SBC 020

- Title of the Course: Selected Drama & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Drama and Grammar.

Part I: Drama: Bhasa's Pratijna Yougandharayanam of Bhasa

- Origin and Development of Sanskrit Drama.
- Date, place, works and style of Bhasakavi
- Pratijna Yougandharayana of Bhasa

Part II: Samskruta Vanijyam: Pracheena Vanijya Charitam – Chapter I & II

Part III Grammar:

1. Samasa 2) Taddita, 3) Sannanta/Nijanta 4) Prayoga
- b) Translation (Sanskrit to Kannada/English)

Texts and Reference Books:

- Bhasa's Pratijna Yougandharayanam - Chawkamba Varanasi
- Samskrute Vanijyam, Chawkamba Varanasi.
- Sanskrita Vanijyam -Vanita Ramaswamy, Bangalore
- Sanskrit Grammar: Higher Sanskrit Grammar, M. R. Kale, Motilal Banarsidass.

(8)

B.Com/BBA/BBA(TTM): SANSKRIT LANGUAGE

IV - Semester : (2020 onwards)

Paper IV – Group I: Q. P. code: 13402/ –11302 SCD/SBD 020

- Title of the Course: Selected Champu Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Champu Kavyas and Grammar.

Part I: Champu Kavya: Champu Bharatam- 3rd Stabaka (Abhimanyu Janana Paryantam)

- Origin and Development of Sanskrit Champu Kavyas.
- Pancha Champu Kavyas.
- Date, place, works and style of Annabhatta
- Champu Bharatam – Third Stabaka (Abhimanyu Janana Paryantam)

Part II: Samskruta Vanijyam: Pracheena Vanijya Charitam– Chapter III & IV

Part III Grammar:

- Sankshepikaranam
- Udyoga Sandarshanam
- Dainandina Vyavaara Lekhanam

Texts and Reference Books:

- Champu Bharatam- Chawkamba Varanasi
- Pracheena Vanijya Charitam – Dr. Vanita Ramaswamy
- Sanskrit Grammar: Higher Sanskrit Grammar, M. R. Kale, Motilal Banarsidass.

BSc./BCA/BSc (Hons) : SANSKRIT LANGUAGE

I - Semester : (2019-20 onwards)

Paper I – Group I: Q. P. code: 12102 –SCA/SBA 020

- Title of the Course: Selected Padya Kavya, Gadya Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Padya and Gadya Kavya and Grammar.

Part I: Padya (poetry) Kavya: Vikramanka Deva Charitam of Billhana (Third Canto)

- Origin and Development of Mahakavya
- Date, place, works and style of Billhana

Part II: Gadya (prose) Kavya: Pushpodhbhava Charitam of Dashakumarm Charitam

- Origin and Development of Sanskrit Gadya Sahitya
- Important Gadya Kavyas in Sanskrit.
- Date, place, works and style of Dandi Kavi.
- Story of Pushpodhbhava

Part III Sanskrute Vijnanam: Science in Sanskrit (Physics).

Part IV Grammar:

- Noun, Swara Sandhi, Krudantavyaya (Padaparichayam) , Verbs (Lat. Lrut),
- Comprehension

Texts and Reference Books:

- Vikramanka Deva Charitam, Chowkamba Publication, Varanasi.
- Sanskrit Grammer: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Joshi
- Subodha Sanskrit Vyakarana – Dr. D. N. Shanabhadg, Dharwad
- Dashakumara Charitam of Dandin, P. V. Kane, Motilal Banarasi Das, Delhi.
- Science in Sanskrit, Samskruta Bharati, Aksharam, Girinagara, Bangaluru.

(15)

BSc./BCA/BSc (Hons) : SANSKRIT LANGUAGE

II - Semester : (2019-20 onwards)

Paper II – Group I: Q. P. code: 12202 – SCB/SBB 020

- Title of the Course: Selected Gadya Kavya, Padya Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Gadya Kavya, Padya Kavya and Grammar.

Part I: Padya (poetry) Kavya: Nalopakhyaṇa of Mahabharatam (60 padya)

- Origin and Development of Epic.
- Definition of Mahakavya.
- Author of Mahabharatam.

Part II: Gadya (prose) Kavya: Mitralabha of Hitopadesha of Narayana Pandita

- Origin and Development of Didactic Literature.
- Narayana Pandita– introduction.
- Moral of Katha Sahitya

Part III Sanskrute Vijnanam: Science in Sanskrit (Mathematics).

Part IV Grammar:

Grammar:

- Sarvanama, Vyanjana & Visarga Sandhi, Verbs (Lot. Lung)

Texts and Reference Books:

- * Hitopadesha of Narayana Pandita- Chawkamba Vidyabhavan, Varanasi.
- * Sanskrita Sahitya Ratnakara
- * Mahabharatam – Vanaparva, Chawkamba Varanasi
- * Sanskrit Grammar: Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Joshi
- * Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.
- * Science in Sanskrit, Samskruta-Bharati, Aksharam, Girinagara, Bangaluru.

(1)

BSc./BCA/BSc (Hons) : SANSKRIT LANGUAGE

III - Semester : (2020 onwards)

Paper III – Group I: Q. P. code: 12302 –SCC/SBC 020

- Title of the Course: Selected Drama & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80
- Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Drama and Grammar.

Part I: Drama: Charudattam of Bhasa

- Origin and Development of Sanskrit Drama.
- Date, place, works and style of Bhasa
- Story of Charudattam of Bhasa

Part II Grammar:

- a) Samasa 2) Taddita, 3) Vakyashuddi 4) Padapariachaya 5) Doshan Pariharata 6) Nijanta/sannan
- b) Translation (Sanskrit to Kannada/English)

Texts and Reference Books:

- **Charudattam of Bhasa** - Chawkamba Varanasi
- Sanskrit Grammar: Higher Sanskrit Grammar, M. R. Kale, Motilal Banarsidass.
- Samskruta Vyakarana Surabhi – Dr. V. B. Joshi & Dr. Krishna V. Johi
- Subodha Sanskrit Vyakarana – Dr. D. Shanabhag N.

(12)

BSc./BCA/BSc (Hons) : SANSKRIT LANGUAGE

IV - Semester : (2020 onwards)

Paper IV – Group I: Q. P. code: 12402 –SCD/SBD 020

- Title of the Course: Selected Champu Kavya & Grammar in Sanskrit Language
- Number of teaching hours per week: 4 hours
- Total Marks: 80

Course Rationale: To acquaint the students with the basic concepts and issues of Sanskrit Champu Kavya and Grammar.

Part I: Champu Kavya: Balakanda of Bhoja

Origin and Development of Sanskrit Champu Kavyas.

- Pancha Champu Kavyas.
- Date, place, works and style of Bhoja Kavi
- Story of Champu Ramayana– Balakanda

Part II Grammar: .

Doshan Pariharata, Kartari/Karmani Prayogas

a) 1) Alankara (Upama, Roopaka, Utpreksha, Atishayokti) 2. Chandas (Anustub, Indravajra, Upendravajra, Vasantatilaka, Malini)

b) Translation– (Sanskrit to Kannada/English)

Texts and Reference Books:

- Champu Bharatam- Chawkamba Varanasi
- Samskruta Kavya Sudha
- PracheenaVanijya Chritam – Dr. Vanita Ramaswamy
- Sanskrit Grammer: Higher Sanskrit Grammar, M. R. Kale, Motilal Banarsidass.

DEPARTMENT OF PG STUDIES AND RESEARCH IN URDU
Sahyadri College Campus, SHIVAMOGGA-577203


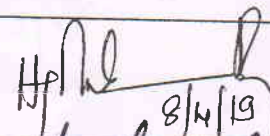
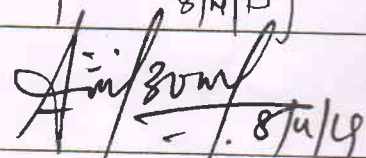
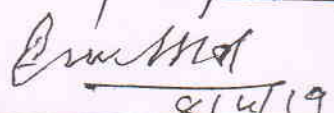
Date: 08-04-2019

PROCEEDINGS OF BOARD OF STUDIES IN URDU (U.G)

The special Meeting of Board of Studies in Urdu (U.G) is held on 8th April 2019 at 11-30am in the Department of P.G. Studies and Research in Urdu, Kuvempu University, Sahyadri College Campus, Shivamogga in the Chairmanship of Dr. Shakeela M. Gorikhan.

Agenda: 1. Preparation of Arts, Science and Commerce degrees B.A./ BSW/B.Sc./ B.Sc. (Hon's) / BCA /B.Com./ BBA/ / BBA (TTM) Urdu language new syllabus and question paper pattern for 1st to 4th semester separately as per university order No.KU:UAT-2: 541:2018-19 dated 26-03-2019.

- a) B.A., / B.S.W degree courses
 - b) B.Sc., / B.C.A / B.Sc., (Hon's.) degree courses
 - c) B. Com., / B.B.A / B.B.A (TTM) degree courses
2. Any other matter with the permission of the chair.

Sl. No.	Name	Designation	Signatures
1	Dr. Shakeela M. Gorikhan Coordinator, Dept of PG Studies and Research in Urdu & Persian, Karnataka University, Dharwad	Chairperson	 08/4/19
2	Dr. Tabassum Naaz H.P Principal, Govt. First Grade College Tarikere	Member	 8/4/19
3	Dr. Syed Sanaulla Associate Professor, Sahyadri Science College, Shivamogga.	Member	 8/4/19
4	Sri Azeez Ahmed .K Assistant Professor, Sahyadri Arts College, Shivamogga.	Member	 8/4/19

Members Absent:

- Nil -

The following Items of Agenda has been discussed and approved by the Board as per the directions given by the university.

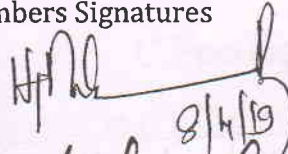
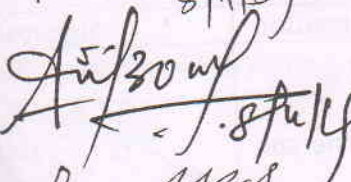
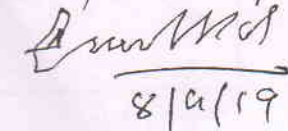
1. Agenda No.1 has taken for discussion regarding the revision of syllabus as per instructions given by the university, the board resolved to revise the syllabus of Urdu language for degree courses in three categories Arts, Science and Commerce.
 - a) From Arts B.A., / B.S.W degree courses
 - b) From Science B.Sc., / B.C.A / B.Sc., (Hon's.) degree courses
 - c) From Commerce B. Com., / B.B.A / B.B.A (TTM) degree courses

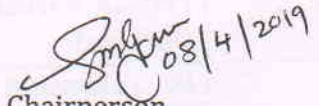
The Board prepared and scrutinized the syllabus and question paper pattern for the above degree courses 1st semester to 4th semester for the above.

2. Agenda No.2 has taken with the permission of Chair and discussed that the Optional B.A., Degree syllabus will be revised and prepared in next BOS meeting.

The meeting is concluded with vote of thank to the chairperson.

Members Signatures

1.  8/4/19
2.  8/4/19
3.  8/4/19

 08/4/2019
 Chairperson
Dr Shakeela. M. Gorikhan
 Chairperson
 BOS in Urdu UG & PG
 Kuvempu University, Shimoga

KUVEMPU



UNIVERSITY

Syllabus for Under Graduate Courses in Urdu Language

First Semester B.A/BSW Degree Effect From 2019-20

Paper : **URDU LANGUAGE PAPER – I**

Title : **Prose, Poetry, Short Stories and Forms of Prose**

Books: **KARWAN-E-ADAB AND DAS MUKHTASAR AFSANE**

Teaching Hours : **4 Per Week**

Duration of Examination: **3 Hours**

Maximum Marks: **Theory 80 marks and Internal Assessment 20 marks=100 marks**

Prescribed Syllabus:

1. KARWAN-E-ADAB
(Detailed Text Book)

Edited by: **Dr. Syed Sanauulla**

Pub: **Nasheman publishers, Near Ikhlas English School,
2nd Stage, RML Nagar, Shimoga.**

PROSE: (First 5 Chapters)

- | | |
|-----------------------------------|---------------------------|
| 1. Bintah-e-Bahaddur Shah | Khwaja Hassan Nizami |
| 2. Khututh-e-Ghalib | Mirza Ghalib |
| 3. Kafan | Premchand |
| 4. Faiz Ahmed Faiz | Mujtaba Hussain |
| 5. Sawere Jo Kal Aankh meri Khuli | Ahmed Shah Pitras Bukhari |

POETRY: Poems: (In First 6 Poems 5 only excluded poem no.2)

- | | |
|-------------------------|------------------------|
| 1. Hamd | Shah Abul Hassan Adeeb |
| 2. Khaid Khane ki Raath | Meer Anees |
| 3. Aata Daal | Nazeer Akbar Abadi |
| 4. Jadeed Tarakhiyath | Altaf Hussain Hali |
| 5. Zamana | Alama Iqbal |

Ghazals: (First 10 Ghazals Sl. No. 12 to 21 of Poetry section)

Quli Qutub Shah to Abdul Hameed Adam

(From “Piya baj pyala piya jaye na” to “Jo log jan bujh kar nadan ban gaye”)

2. DAS MUKHTASAR AFSANE Edited by: **Dr. Syed Sanauulla**
(Non-Detailed Text Book)

Pub: **Nasheman publishers, Near Ikhlas English School,
Stage, RML Nagar, Shimoga.**

(First 5 Short Stories)

- | | |
|--------------------------------|----------------------|
| 1. Souteli Maa | Premchand |
| 2. Jamun ka Ped | Krishenchander |
| 3. Khudkushi | Saadath Hassan Manto |
| 4. Nazara Darmiyan Hai | Qurath ul Ain Hyder |
| 5. Andhere se Andhere ki taraf | Ramlal |

3- ASNAF-E-ADAB KA IRTEQA Syed Safi Murtuza Puib; Educational Books

Reference Book
Forms of Prose only

Aligarh

Second Semester B.A/BSW Degree Effect From 2019-20

Paper : **URDU LANGUAGE PAPER – II**

Title : **Prose, Poetry, Short Stories and Forms of Poetry**

Books: **KARWAN-E-ADAB AND DUS MUKHTASAR AFSANE**

Teaching Hours : **4 Per Week**

Duration of Examination: **3 Hours**

Maximum Marks: **Theory 80 marks and Internal Assessment 20 marks=100 marks**

Prescribed Syllabus:

1. **KARWAN-E-ADAB**

(Detailed Text Book)

Edited by: **Dr. Syed Sanaulla**

Pub: **Nasheman publishers, Near Ikhlas English School
2nd Stage, RML Nagar, Shimoga.**

PROSE: (Last 5 Chapters)

- | | |
|------------------------------------|---------------------|
| 1. Umre Raftha | Sir Syed Ahmed Khan |
| 2. Mirza Ghalib ke Akhlaq o Aadath | Altaf Hussain Hali |
| 3. Kahawaten aur Mahavire | Ghulam Rabbani |
| 4. Mohalle ki Holi | Athar Parveez |
| 5. Mumtaz Shair Abbas Tabish..... | Shahid Makli |

POETRY: Poems: (5 Poems Sl. No.7 to 11)

- | | |
|--------------------------|-----------------------|
| 1. Sehrul Bayan | Meer Hasan |
| 2. Tazheek e Rozgar | Mirza Souda |
| 3. Khak-e-Hind | Bruj Narayan Chakbast |
| 4. Taleem-e-Niswan | Akbar Ilahabadi |
| 5. Bol Ari-o-Dharthi Bol | Israr ul Haq Majaz |

Ghazals: (Last 10 Ghazals Sl. No. 22 to 31 of Poetry section)

Wali Dakhni to Mohammed Yaqoob Begana

(From “Sharab Shouq Seen Sarshar hain Hum” to “Zindagi Hai ek Tamasha aur kya”)

2. **DAS MUKHTASAR AFSANE**

(Non-Detailed Text Book)

Edited by: **Dr. Syed Sanaulla**

Pub: **Nasheman publishers, Near Ikhlas English School, 2nd
Stage, RML Nagar, Shimoga.**

(Last 5 Short Stories)

- | | |
|--------------------|---------------------|
| 1. Garam Coat | Rajendar Singh Bedi |
| 2. I.C.S | Ali Abbas Hussaini |
| 3. Bath Phoolon Ki | Jeelani Banu |
| 4. Athara Aane | Akhtar Ansari |
| 5. Nadi | Salam Bin Razzaq |

3- **ASNAF-E-ADAB KA IRTEQA**

Syed Safi Murtuza

Puib;Educational Book House

Reference Book

Forms of poetry only

Aligarh

Third Semester B.A/BSW Degree Effect From 2020-21

Paper : **URDU LANGUAGE PAPER – III**

Title : **Prose, Poetry, Drama and Essay Writing**

Duration of Examination: **3 Hours**

Books : **PASBAN-E-ADAB AND MITTI KA BULAVA**

Teaching Hours : **4 Per Week**

Maximum Marks: **Theory 80 marks and Internal Assessment 20 marks=100 marks**

Prescribed Syllabus:

1. PASBAN-E-ADAB

(Detailed Text Book)

Edited by: Editorial Board

Pub: Nasheman publishers, Near Ikhlas English School
2nd Stage, RML Nagar, Shimoga.

PROSE: (First 5 Chapters)

1. Hamari Zaban ka Nam Syed Suleman Nadvi
2. Junubi Hind ka ek Bakamal Shayar Suleman Athar Javeed
3. Saheb Bath Room mein hain Mujtaba Hussain
4. Gesu e Urdu Gesu daraz Japani Guru Javeed Danish
5. Bhagwan ki Aamad Krishenchandar

POETRY: Poems: (In First 6 Poems 5 only excluded poem no.1)

Included:

1. Masnavi dar Hajo folad Khan kotwal Mirza Souda
2. Aye Sharif Insano Sahir Ludhiyanvi
3. Walida Marhoma ki Yad meinl Sir Mohammed Iqbal
4. Dawath-e-Inqilab Josh Malih Abadi
5. Mujhse Pehli si Mohabat..... Faiz Ahmed Faiz

Ghazals: (First 10 Ghazals Sl. No. 12 to 21 of Poetry section)

Poets: **Siraj Aurangabadi to Iftikhar Arif**

(Ghazals From “Khabar Tahaur Ishq....” to “Dayar Noor mein tera shabon ka sathi ho”)

2- MITTI KA BULAVA (First three Drama) Shameem Hanfi

Non Detailed Text

Educational Book House Aligarh

(1-Mitti ka Bulava 2-Dhoop ki Dastak 3 Khoya Hua Lamha)

3-General Essay Akhlaqi, Siyasi,samaji aur Scienci Mazameen

Fourth Semester B.A/BSW Degree Effect From 2020-21

Paper : **URDU LANGUAGE PAPER – IV**

Title : **Prose, Poetry, Drama and Translation**

Books: **PASBAN-E-ADAB AND MITTI KA BULAVA**

Teaching Hours : **4 Per Week**

Duration of Examination: **3 Hours**

Maximum Marks: **Theory 80 marks and Internal Assessment 20 marks=100 marks**

Prescribed Syllabus:

1. PASBAN-E-ADAB

Edited by: Editorial Board

(Detailed Text Book)

Pub: Nasheman publishers, Near Ikhlas English
2nd Stage, RML Nagar, Shimoga.

PROSE: (Last 5 Chapters Sl. No.6 to 10)

- | | |
|--|-----------------------|
| 1. Adab Aur Tehzeeb | Ehtisham Hussain |
| 2. Mumtaz Mufti ki Yad Mein | Aksi Mufti |
| 3. Alfaz ka Jado | Abdul Majid Daryabadi |
| 4. Ghalib Jadeed Shora ki ek Majlis mein | Kanhaiyalal Kapoor |
| 5. Hindustani Adab mein Hali ka Darja | Aal Ahmed Suroor |

POETRY: Poems: (Last 5 Poems Sl. No.7 to 11)

- | | |
|---------------------------|-------------------|
| 1. Shahadath Imam Hussain | Meerza Dabeer |
| 2. Ek Ladka | Akhtar ul Iman |
| 3. Saanp | Suleman Khateeb |
| 4. Sar-e-Toor | Ali Sardar Jaffry |
| 5. Mein Purana Hua | Sajid Hameed |

Ghazals: (Last 10 Ghazals Sl. No. 22 to 31 of Poetry section)

Poets: Khwaja Meer Dard to Muneer Nayazi

(Ghazals From “Madrassa ya dair tha.....” to “Dil Jalraha tha Gham se.....”)

2-MITTI KA BULAVA

(Non Detailed Text)

Last Deama 1- Khala Ke Bashinde 2-Jazeera se Aage 3- Pani Pani

3-Translation (English to Urdu) Passage from Detailed Book Pasban-e-Ada

by Shameem Hanf

Educational Book House Aligarh

First Semester B.Sc/B.Sc(Hon's)/BCA Degree effect from 2019-20

Paper : URDU LANGUAGE PAPER – I

Title : Prose, Poetry , Fiction and Forms of Prose

Books: NISHATH-E-ADAB AND URDU KE DAS AFSANE

Teaching Hours : 4 Per Week

Duration of Examination: 3 Hours

Maximum Marks: Theory 80 marks and Internal Assessment 20 marks=100 marks

Prescribed Syllabus:

1. NISHATH-E-ADAB

(Detailed Text Book)

Edited By: Editorial Board

Pub: Nasheman publishers, Near Ikhlas English School
Stage, RML Nagar, Shimoga-577 202.

PROSE: (5 Chapters Sl. No. 1 to 5)

- | | |
|-----------------|----------------------|
| 1. Sabras | Meer Aman Dehelvi |
| 2. Gul Banu | Khwaja Hassan Nizami |
| 3. Prof. Danish | Kanhaiyalal Kapoor |
| 4. Naya Khazana | Krishenchandar |
| 5. Achchi Kitab | Moulvi Abdul Haq |

POETRY: Poems: (First 5 Poems Sl. No.2 to 6)

- | | |
|---------------------------|-------------|
| 1. Jogan aur Chandni Rath | Meer Hassan |
|---------------------------|-------------|

- | | |
|-----------------------------|--------------------|
| 2. Kaljug | Nazeer Akbar Abadi |
| 3. Shuaye Umeed | Sir Mohammed Iqbal |
| 4. O Des se Aane wale batha | Akhtar Sheerani |
| 5. Ham Loog | Faiz ahmed Faiz |

Ghazals: (10 Ghazals of 10 poets from Sl. No. 12 to 21 **Poets:** Meer taqi Meer to Ehsan Danish (from ibteda-e-Irteqa-----to Mousam se rang-o-Boo-----))

- | | |
|--|--|
| 2. DAS MUKHTASAR AFSANE
(Non-Detailed Text Book) | Edited by: Editorial Board
Pub: Nasheman publishers, Near Ikhlas English School, 2 nd Stage, RML Nagar, Shimoga-577 202. |
| (First 5 Short Stories Sl. No. 1 to 5) | |

- | | |
|----------------------------|---------------------|
| 1. Mantar | Premchand |
| 2. Naya Khanon | Sadath Hassan Manto |
| 3. Main ne Aisa Kyun Kiya? | Akhtar Ansari |
| 4. Nazara Darmiyan Hai | Qurath ul Ain Hyder |
| 5. Naya Khazana | Krishenchander |

- | | |
|---|---|
| 3-ASNAF-E-ADAB KA IRTEQA
Reference Book | Safi Murtuza Educational book House Aligarh |
|---|---|

Second Semester B.Sc/B. Sc(Hon's)/BCA Degree effect from 2019-20

Paper : **URDU LANGUAGE PAPER – II**

Title : **Prose, Poetry and Fiction**

Books: **NISHATH-E-ADAB AND URDU KE AFSANE**

Teaching Hours : **4 Per Week**

Duration of Examination: **3 Hours**

Maximum Marks: Theory 80 marks and Internal Assessment 20 marks=**100 marks**

Prescribed Syllabus:

- | | |
|--|--|
| 1. NISHATH-E-ADAB
(Detailed Text Book) | Edited By: Editorial Board
Pub: Nasheman publishers, Near Ikhlas English School, 2 nd Stage, RML Nagar, Shimoga-577 202. |
| PROSE: (5 Chapters Sl. No. 6 to 10) | |
| 1. Hali Ki Seerath | Saleha Abid Hussain |
| 2. Talmihath | Mehmood Nayazi |
| 3. Murda Badast Zinda | Mirza Farhathulla Baig |
| 4. Bhole Nawab | Rathannath Sarshar |
| 5. Computer | Inderjeethlal |
| POETRY: Poems: (5 Poems) | |
| 1. Qaid Khane ki Raath | Meer Anees |
| 2. Husn Aur Mazdoori | Josh Maleehabadi |
| 3. Phool Mala | Brij Narayan Chakbast |
| 4. Dholak ka Geeth | Suleman Khateeb |
| 5. Naya Suraj | Moin Ahsan Jazbi |

Ghazals: (810 Ghazals from Sl. No. 22 to 31 **Poets:** Naseem Mazhari to Bashar Nawaz

(A Kya Rangin bayani haito Tez ho dhoop to kuich aur.....)

2-URDU KE DAS AFSANE

Edited by: Dr. Syed Sanauulla

(Non-Detailed Text Book)

Pub: Nasheman publishers, Near Ikhlas English School,
2nd Stage, RML Nagar, Shimoga-577 202.

(5 Short Stories Sl. No. 6 to 10)

1. Hamdosh
2. Addu
3. Who jo Khoye Gaye
4. Bajuka
5. Over Coat

Rajendar Singh Bedi
Jeelani Banu
Intezar Hussain
Surender Prakash
Ghulam Abbas

3-ASNAFE ADAB KA IRTEQA

Reference Book

Forms of Poetry

Syed Safi Murtuza Educational Book House Aligarh

Third Semester B.Sc/B.Sc(Hon's)/BCA Degree effect from 2020-21

Paper : URDU LANGUAGE PAPER – III

Title : Prose, Poetry ,Dram,a & Essay Writing

Books: GULSHAN-E-ADAB AND KAROBARI KHATH-O-KITABATH

Teaching Hours : 4 Per Week

Duration of Examination: 3 Hours

Maximum Marks: Theory 80 marks and Internal Assessment 20 marks=100 marks

Prescribed Syllabus:

1. GULSHAN -E-ADAB

(Detailed Text Book)

By: Editorial Board

Pub: Nasheman publishers, Near Ikhlas English School, 2nd
Stage, RML Nagar, Shimoga-577 202.

PROSE: (5 Chapters Sl. No. 1 to 5)

1. Khushamad
2. Sir Syed Ke Akhlaq
3. Talash
4. Abdur Raheem Khan-e-Khana ki Darya Dili
5. Athare Aane

Sir Syed Ahmed Khan
Altaf Hussain Hali
Imtiyaz Ali Taj & Qudsiya Zaidi
Mohammed Hussain Azad
Akhtar Ansari

POETRY: Poems: (First 5 Poems Sl. No.2 to 6)

1. Aawara Hona Bakawali ka.....
2. Banjara Nama
3. Khak-e-Hind
4. Aurath
5. Zindan ki Ek Sham

Dayashankar Naseem
Nazeer Akbar Abadi
Brij Narayan Chakbast
Akhtar Sheerani
Faiz Ahmed Faiz

Ghazals: (10 Ghazals from Sl. No. 12 to 21 from poetry section . Poets: Wali Dakhni to Bahadur Sha Zafar

(Khub roo Khoob kam karte hain ... to my khasta tamam.....)

2-Zuhak

Mohammed Hasan

Pub: Idare Tasneef D-7 Model Town Delhi

3-General Essay Akhlaqi, Siyasi, Samaji aur Scienci Mazameen)

Fourth Semester B.Sc/B.Sc(Hon's)/BCA Degree effect from 2020-21

Paper : URDU LANGUAGE PAPER – II

Title : Prose, Poetry

Books: GULSHAN -E-ADAB

Teaching Hours : 4 Per Week

Duration of Examination: 3 Hours

Maximum Marks: Theory 80 marks and Internal Assessment 20 marks=100 marks

Prescribed Syllabus:

1. GULSHAN -E-ADAB
(Detailed Text Book)

By: Editorial Board

Pub: Nasheman publishers, Near Ikhlas English School,
Stage, RML Nagar, Shimoga-577 202.

PROSE: (5 Chapters Sl. No. 6 to 10)

1. Adab Kya Hai
2. Khal mein Raho Begum
3. Shakhsiyath aur Khud Aetimadi
4. Addu
5. Duboya Ham ko Khane ne

Dr. Jameel Jalibi
Ibrahim Jalees
Del Karnegi
Jeelani Banu
Rawoof Khuster

POETRY: Poems: (5 Poems Sl. No.7 to 11)

1. Tazheek-e-Rozgar
2. Jibreel-o-Iblees
3. Chand Taron ka Ban
4. Taj Mahal
5. Zindagi

Mohammed Rafi Souda
Sir Mohammed Iqbal
Maqdoom Mohiuddin
Sahir Ludhianaavi
Masood Siraj Adeebi

From poetry

Ghazals: (10 Ghazals from Sl. No. 22 to 31 Poets Hasrath to Parveen shakir :

(from Nighahe yaar Jise Aashna ... to Yad kiya Aayenge o Log....)

2-AAGRA BAZAR

Habeeb Tanveer Pub:Azad Kitab Ghar
Kalan Mahal Delhi

3-Translation (English to Urdu) Passage from the book Pasban-e-Adab

10

First Semester B.Com/BBA/BBA(TTM) effect from 2019-20

Paper : **URDU LANGUAGE PAPER – I**

Title : **Prose, Poetry and forms of prose**

Books: **NISHATH-E-ADAB AND KAR-o-BARi Khat-o-Kitabath**

Teaching Hours : **4 Per Week**

Duration of Examination: **3 Hours**

Maximum Marks: Theory 80 marks and Internal Assessment 20 marks=**100 marks**

Prescribed Syllabus:

1-NISHATH-E-ADAB
(Detailed Text Book)

Edited By: Editorial Board

Pub: Nasheman publishers, Near Ikhlas English
School, 2nd Stage, RML Nagar, Shimoga-577 20

PROSE: (5 Chapters Sl. No. 1 to 5)

1-Sabras

Meer Aman Dehelvi

2-Gul Banu

Khwaja Hassan Nizami

3-Professor Danish

Kanhaiyalal Kapoor

4-Namak ka Daroga

Premchand

5-Achchi Kitab

Moulvi Abdul Haq

POETRY: Poems: (First 5 Poems Sl. No.2 to 6)

1-Jogan aur Chandni Rath

Meer Hassan

2-Kaljug

Nazeer Akbar Abadi

3-Shuaye Umeed

Sir Mohammed Iqbal

4-O Des se Aane wale batha

Akhtar Sheerani

5-Ham Loog

Faiz ahmed Faiz

From poetry section

Ghazals: (10 Ghazals from Sl. No. 12 to 21 Poets Meer, Taqi Meer to Ehsan Danish)

From Ibteda-e-Ishq hai To Mousam se rang –o-Boo hain....)

2-Karobari Khat o Kitabath

Pub: Harir academy No.1356, Ist phase BEMI
Layout RR Nagar Bangalore 560018

(Non-Detailed Text Book)

(5 Chapters Sl. No. 1,2, 5,6 & 7)

(Karobari Khath ke Chand Aaham Nukath,

Khawayad Zaban, Khutuh awr fane Khath Naveesi

Daryafthname

Narq namy aur Razakarana peshkash

Farmayish aur Taameel Farmayesh)

3-ASNAF-E ADAB KA IRTEQA

Syed Safi Murtuza Educational Book House Aligarh

Reference Book

Forms of poetry only

6. Mantar
7. Naya Khanon
8. Main ne Aisa Kyun Kiya?
9. Nazara Darmiyani Hai
10. Naya Khazana

Premchand
Sadath Hassan Manto
Akhtar Ansari
Qurath ul Ain Hyder
Krishenchander

Second Semester B.Com/BBA/BBA(TTM) Degree effect from 2019-20

Paper : URDU LANGUAGE PAPER – II

Title : Prose, Poetry, Business Correspondence and forms of poetry

Books: NISHATH-E-ADAB AND KAROBARI KHATH O KITABATH

Teaching Hours : 4 Per Week

Duration of Examination: 3 Hours

Maximum Marks: Theory 80 marks and Internal Assessment 20 marks=100 marks

Prescribed Syllabus:

1-NISHATH-E-ADAB
(Detailed Text Book)

Edited By: Editorial Board

Pub: Nasheman publishers, Near Ikhlas English School, 2nd
Stage, RML Nagar, Shimoga-577 202.

PROSE: (5 Chapters Sl. No. 6 to 10)

1-Hali Ki Seerath

Saleha Abid Hussain

2-Talmihath

Mehmood Nayazi

3-Murda Badast Zinda

Mirza Farhathulla Baig5-

4-Bhole Nawab

Rathannath Sarshar

5- Computer

Inderjeethlal

POETRY: Poems: (5 Poems)

1-Qaid Khane ki Raath

Meer Anees

2-Husn Aur Mazdoori

Josh Maleehabadi

3-Phool Mala

Brij Narayan Chakbast

4-Dholak ka Geeth

Suleman Khateeb

5-Naya Suraj

Moin Ahsan Jazbi

Ghazals: (10 Ghazals of 10 poets Naseem Mysoori to Bashar Nawaz) from Sl. No. 22 to 31
(from A kya Rangeen Bayani Hai To Tez ho dhoop tho kuch aur...)

2-KAROBARI KHATH -O -KITABATH Pub:Harir Academy No.1352 Ist Phase
BEML Layout,RR.Nagar Bangalore 560078

(Chapters 3,4,8,9 & 12)

Tijarati Khootooth ki Tashkeel w tarteeb

Murasalati shobe ka Intezam :

Shaksiyath -o-Izala-e- Shaksiyath

Hisab ki Chuktayee

Khidmath talbi)

3-ASNAF-E-ADAB

Syed Safi Murtuza Pub: Educational Book House Aligarh

Reference Book

Forms of poetry only

12

Third Semester B.Com/BBA/BBA(TTM) Degree effect from 2020-21

Paper: URDU LANGUAGE PAPER – III

Title : Prose, Poetry, Principles of Business and Precise Writing

Books: IRFAN-E-ADAB AND SAHAFATH-O-TIJARATH

Teaching Hours : 4 Per Week

Duration of Examination: 3 Hours

Maximum Marks: Theory 80 and Internal Assessment 20 =100 marks

Prescribed Syllabus:

1. IRFAN -E-ADAB

(Detailed Text Book)

By: Board of studies Bombay /Book House

2nd cross Gandhi Bazaar Shimoga

PROSE: (5 Chapters Sl. No. 1 to 5)

1. Tanqeed Kya Hai?
2. Siddeeq -e -Akbar
3. Dr. Qamar Raees
4. Sadak aur Shayar
5. Ghazal

(Interview)

Noor ul Hassan Naqvi
Moulana Akbar Sha Najeebabadi
Dr. Manazir Aashiq Harganvi
Mujtaba Hussain
Aal Ahmed Suroor

POETRY: Poems: (First 5 Poems Sl. No.2 to 6)

1. Noujawan Khatoon se
2. Dua-e-Aseer
3. Ek Netha aur Ladka
4. Ajantha
5. Seher Hone Tak

Israr ul Haq Majaaz
Mohammed Ali Jowhar
Talib Khundmeri
Sikarndar Ali Wajad
Mehmood Ayaz

Ghazals: (10 Ghazals of 10 Poets: Khuli Khutub Shah , Ameer Minai, Daagh Dehelvi, Alama Iqbal, Israr ul haq Majaz, Majrooh Sultanpuri Suleman Khumar, Nasir Kazmi, Ahmed Faraz & Parveen Shakir).

2. SAHAFATH-O-TIJARATH Edited By: Prof. C. Syed Khaleel Ahmed

(Non Detailed Text Book)

Pub: Bombay Book House, Gandhi Bazaar, 2nd Cross,
Nagappan Street, Shimoga 577202.

PROSE: (Sl. No. 2 to 6 = 5 Chapters)

1. Sahafath Kise Kehte Hain Syed Iqbal Khadri
2. Khabar Kise kehte Hain Syed Iqbal Khadri
3. Hindustan mein Urdu Sahafath ka Irtiqa Prof. C. Syed Khaleel Ahmed
4. Idariya Navesi Ishrath Ali Siddiqui
5. Karnatak ke Aham Urdu Sahafi Anees Siddiqui

3-PRECISE WRITING(Urdu passage should not less then 12 lines)

(12)

Fourth Semester B.Com/BBA/BBA(TTM) Degree effect from 2020-21

Paper : URDU LANGUAGE PAPER – IV

Title : Prose, Poetry, features of Business studies

Books: IRFAN -E-ADAB AND SAHAFATH-O-TIJARATH

Teaching Hours : 4 Per Week

Duration of Examination: 3 Hours

Maximum Marks: Theory 80 and Internal Assessment 20 =100 marks

Prescribed Syllabus:

1. IRFAN -E-ADAB
(Detailed Text Book)

PROSE: (5 Chapters)

1. Khutooth
2. Newton aur Seb
3. Khalid bin Waleed ka Quboole Islam
4. Khuda Hafiz (Drama)
5. Nazm

By: Board of Studies

Bombay book House 2nd cross Gandhi Bazaar Shivamogga ,

Ghalib, Iqbal, Khwaja Ahmed Farooqi
Sektef and Sektef
Talib Hashimi
Showkath Thanwi
Dr. Sayeeda Zohra Begum

POETRY: Poems: (5 Poems)

1. Attayis Tareekh
2. Nigahe Khuloos Been
3. Shahnama-e-Islam (Iqtibas)
Hazrath Ismail ki Wiladath aur Ma Bete ki Hijrath
4. Ek Khwab Aur
5. Nawaye Zer-e-Labi

Suleman Khateeb
Josh Malihabadi

Hafeez Jalandhari
Ali Sardar Jafri
Hameed Almas

Ghazals: (10 Ghazals of 10 Poets Meer Dard, Momin, Jan Nisar Akhtar, Shehr Yaar, Faiz Ahmed Faiz, Khateel Shifai, Sahir Ludhianvi, Munawar Rana, Rafia Shabnam Abidi and Saghar Karnataki.

2. SAHAFATH-O-TIJARATH Edited By: Prof. C. Syed Khaleel Ahmed
(Non Detailed Text Book)

Pub: Bombay Book House, Gandhi Bazaar, 2nd Cross,
Nagappan Street, Shimoga 577202.

PROSE: (5 Chapters Sl. No.7 to 11)

1. Karobar ki Mubadiyath
2. Karobari Aadmi ka Nizam e amal
3. Kharidar ki Zimmedariyan
4. Tajir ki Imandari
5. Kamyabi ke Che Usool

Arif Mohammed Khan
Syed Zuhoor Ahmed
S.M. Aqheel
S.M. Aqheel
Del Karnegi

3- Translation(English to Urdu) Passage from the Book Pasban-e- Adab

Pattern of Question paper

Time 3 hrs

Max.Marks 80

Note. Answer all Questions

Section A


- 1-Answer all questions (Five out of Five) 5X2+10
(Multiple Choice question from Prose and Poetry)
2-Answer any two of the following (Two out of three) 2X10=20
3-Answer any two of the following 2X5=10

B Section

- 4-Answer any one of the following (one out of two) 1X10=10
5-Answer any two of the following (Two out of four) 2X5=10

C. Section

6. Answer any one of the following (one out of two) 1X10=10
7-Answer any two of the following (two out of four) 2X5=10


08/4/2019
Chairperson
Dr Shakeela. M. Gorikhan
Chairperson
BOS in Urdu UG & PG
Kuvempu University, Shimoga



KUVEMPU UNIVERSITY

PHYSICS

**THREE YEAR B.Sc., DEGREE COURSE
(Semester Scheme)**

TO BE IMPLEMENTED FROM THE YEAR - 2019

Scheme of theory syllabus and Examination

1. Theory 4 hour lectures per week and each practical is 3 hours

2. Theory and practical examination duration is 3 hours

SEMESTER	THEORY			INTERNAL ASSESSMENT (I.A)	PRACTICAL	TOTAL MARKS
	PAPER	PAPER CODE	MAX. MARKS	MAX. MARKS	MAX. MARKS	
I	I	SSA710-A	50	10	40	100
II	II	SSB710-A	50	10	40	100
III	III	SSC710-A	50	10	40	100
IV	IV	SSD710-A	50	10	40	100
V	V	SSE610-A	50	10	40	200
	VI	SSE611-A	50	10	40	
VI	VII	SSF610-A	50	10	40	200
	VIII	SSF611-A	50	10	40	

Question paper Pattern
PAPER: I to VIII semesters (all papers)

Section A

- To be answered in brief.
- Short answer questions.
- Questions are to be set on the concept of the subject.
- Small relevant problems may be included.
- Each question carries 2 Marks.
- 7 questions are to be answered out of 9 questions given.

Section B:

- Long answer type questions –To be answered with detailed explanation, analysis, mathematical derivation etc.,
- Each question carries 4 Marks.
- 6 questions are to be answered out of 8 questions given.

Section C:

- Problems.
- Each problem carries 3 marks – includes both numerical and theoretical problems.
- 4 questions are to be answered out of 6 questions given.

Practical Examination:

Submission of duly certified record book in the examination is compulsory. The candidate who has not submitted the record book is not eligible to take the practical examination.

Maximum Marks for doing Examination	:	30
Maximum Marks for Practical Record Book	:	05
Maximum Marks for Viva-Voce	:	05
Grand total	:	40

FIRST SEMESTER (PAPER-I)

MECHANICS AND PROPERTIES OF MATTER

(4 hours of lecture per week)

60 Hours

1. PLANAR MOTION:

Review of vector algebra, Scalar and Vector product. Derivative of a vector. Review of polar coordinates. Derivative of a vector of constant magnitude (derivation of $\frac{d\vec{A}}{dt} \perp \vec{A}$). Radial and transverse components of velocity and acceleration (meaning and derivation of R and T components) – application to uniform circular motion- centripetal force, areal velocity(derivation), problems.

5 Hrs

2. FRAMES OF REFERENCE:

Concept of frames of reference. Galilean transformations, Galilean principle of relativity (statement and explanation using various examples).

Inertial frames: Newton's laws of motion (statements and their significance). A frame of reference moving with a uniform velocity with respect to an inertial frame is also inertial (Proof).

Non-inertial frames – A frame of reference moving with uniform Acceleration with respect to an inertial frame – a non-inertial frame (proof). Fictitious force – examples. Measurement of acceleration using plumb line (derivation).

Rotating frames of reference - derivation for expression of force. Types of forces in rotating frame. Discussion of the earth as an inertial frame, Foucault pendulum (brief explanation). Conical pendulum – expression for Time period (derivation) w.r.t an inertial (lab) and non inertial (rotating frames). Problems.

11Hrs.

3. SYSTEM OF PARTICLES:

Newton's laws for a system of particles (qualitative)–centre of mass (definition)– External and internal forces. Linear momentum of system of particles, motion of CM, Law of conservation of linear momentum -Rocket motion – expression for instantaneous and final velocities – effect of earth's gravity – multi stage rockets – brief account of Indian rockets.

Angular momentum – Relation between the torque and momentum, theorems on total angular momentum about CM. Law of conservation of angular momentum - examples.

Work done by a variable force: Work – energy theorem(derivation) – conservative force fields, potential energy - conservation of energy, examples – oscillation of a loaded spiral spring Atwood machine (calculation of acceleration using conservation of energy).

Collisions: Elastic and inelastic collisions – elastic head on collision – oblique collision of identical masses in a plane.

Central forces – characteristics of central motion. problems. 13Hrs

4. GRAVITATION:

Newton's law of gravity in vector form. Gravitational potential and field for spherical mass distributions –thin spherical shell and solid sphere (derivation in both case). *Kepler's laws* – statements and derivation, conditions for different orbits, brief account on physics of tides.

Elements of satellite motion – orbital velocity, time period and escape velocity (Brief explanation). geosynchronous orbits, applications of artificial satellites, GPS (in brief).problems. 8Hrs.

5. ROTATIONAL MOTION:

Concept of a rigid body. Moment of inertia-definition and its significance. Equation of motion for rotation motion- K.E of a rotating body (derivation), General Theorems on moment of inertia. (1) perpendicular axes theorem- for plane lamina and for three dimensional body (2) parallel axes theorem (Statement and proof for both).Mention of expression of M I for rectangular plate and circular disc about different axes. Expression for MI of solid cylinder and solid sphere about different axes (derivation).motion of a cylinder rolling down in an inclined plane – expression for velocity and energy(derivation). Theory of compound pendulum –time period, problems. 7 Hrs

6. ELASTISITY:

Stress and strain – elastic limits – Hooke's law – molecular origin –Elastic constants for an isotropic solid, Poisson's ratio- limiting value of Poisson's ratio (for both theoretical and practical), the inter-relation between elastic constants $k = \frac{q}{3(1-2\sigma)}$, $n = \frac{q}{2(1+\sigma)}$, & $q = \frac{9nk}{3(k+n)}$. Work done in stretching and work done in twisting a wire - Torsion of a cylinder –

couple per unit twist derivation, torsional pendulum- frequency expression (derivation).
Theory of Bending moment and Single cantilever, I Section girders -problems. 8 Hrs

7. VISCOSITY:

Streamline and turbulent motion, coefficient of viscosity, critical velocity, Reynold's number, Poiseuille's equation (derivation), Stokes law (derivation from dimensional formula), terminal velocity, factors affecting viscosity of a liquid (qualitative), Applications.Problems.
4 Hrs

8. SURFACE TENSION:

Synclastic and anticlastic surface –Illustration of surface tension with examples, relation between surface tension and surface energy, molecular theory of surface tension. *Excess pressure within a curved surface* (derivation) - application to spherical and cylindrical drops and bubbles. Factors affecting surface tension of a liquid. Applications. Problems.
4Hrs

NOTE : Sufficient numbers of problems are to be worked out in each section which would enhance the understanding of the subject.

REFERENCES:

- 1)Berkeley course in physics – vol I
- 2) Classical mechanics – Takwale.
- 3) Classical mechanics – K.N.SrinivasRao.
- 4) Fundamentals of physics – Halliday, Resnick and Walker- sixth edition.
- 5) Mechanics – D.S.Mathur.
- 6) Properties of matter – D.S.Mathur.
- 7) Newtonian mechanics – A.P. French.
- 8) Physics- vol-1 : Clark



PRACTICALS –I

(One experiment per week to be conducted in 3 hours duration)

- 1) Bar pendulum – g and k by $h-T$ and $h^2- hT^2$ graph.
- 2) Spiral spring – force constant, g and unknown mass by graphical method.
- 3) Fly wheel – M.I, mass and density of fly wheel.
- 4) ' q ' by Stretching – graphical method.
- 5) ' q ' by uniform bending – graphical method.
- 6) Surface tension by capillary rise method.
- 7) Surface tension and angle of contact by Quinke's method.
- 8) Surface tension and interfacial tension by drop weight method.
- 9) Viscosity of water by capillary flow method.
- 10) Viscosity of oil by Stoke's method.
- 11) Specific heat by cooling – graphical method.
- 12) Perpendicular axis theorem using torsion pendulum.
- 13) Bulk modulus of rubber.
- 14) Conservation of energy- using inclined plane.
- 15) Determination of elastic moduli, Poisson's ratio and acceleration due to gravity ' g '.
- 16) To study kinematics of Atwood's machine and hence to determine the value of ' g '

NOTE:

1. Suitable and relevant experiments may be included.
2. Experiments mentioned in I and II semester may be redistributed depending upon the facilities available in the laboratory.
3. Minimum of 8 experiments should be done in each practical.
4. Experiment should be elaborative so as to extend for 3 hours duration.
5. Error estimation may be included for few experiments.

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SECOND SEMESTER (PAPER- II)

HEAT & THERMODYNAMICS, RADIATION, WAVES, OSCILLATIONS & SOUND.

(4 hours of lecture per week)

60 Hours

1. THERMODYNAMICS:

Concept of heat and temperature, Zeroth law and first law of thermodynamics .Brief discussion of isothermal and adiabatic processes, Equation of state of a gas in adiabatic processes (derivation). Relation between P,V and T. Slopes of Isothermal and adiabatics. Relation between Isothermal and adiabatic elasticities.P-V diagram. Carnot cycle: Expression for efficiency (no derivation).

Second law of thermodynamics: Kelvin and Clausius statements. Applications of Second law of Thermodynamics-Refrigerator. Carnot theorem-Statement and proof. Thermo-dynamic scale of temperature. Clausius-Clayperon equation (derivation)- It's application for Melting point and boiling points.

12 Hrs

2. ENTROPY:

Concept of entropy, Change of entropy in reversible and irreversible processes with examples. T-S diagrams-Carnot's cycle. Change in entropy during change of state, entropy disorder, heat death. Entropy and second law of thermodynamics. The applications of entropy.Third law of thermodynamics - statement and brief explanation.

Thermodynamic Potentials: Extensive and intensive thermodynamic variables. Thermo-dynamic Potentials U, H, F and G. Maxwell thermodynamic relation-Their definitions, properties and applications , Derivations and applications - TdS equation

10Hrs

3. KINETIC THEORY OF GASES:

Maxwell's law of distribution of velocities (statement and expression).Expression for mean free path.Degrees of freedom, law of equipartition of energy (statement and derivation) Calculation of value of γ for monoatomic, diatomic and triatomic gases.5Hrs

4. REAL GASES :

Comparison between ideal and real gases, isotherms of a real gas, Vanderwal's equation of state –discussion of correction for pressure and volume, expression for critical temperature, volume and pressure. Liquefaction of gases – porous plug experiment with theory – derivation of expression for temperature of inversion. Principle of adiabatic demagnetization. Joule-Thomson Cooling (using Maxwell relation). 6 hrs

5. *RADIATION*: Distribution of energy in the spectrum of a black body. Wein's displacement law, Wein's law of radiation, Rayleigh- Jeans law. Planck's law of radiation and derivation from the concept of harmonic oscillators – deduction of Wein's law, Wein's displacement law, Rayleigh – Jeans law, and Stefan's law from Planck's law of radiation. Solar constant – temperature of the sun from solar constant. Radiation pressure (definition)

9 Hrs

6. *OSCILLATIONS*:

Review of simple harmonic motion, expression for frequency from the equation $f \propto -x$ (derivation). Equation for damped simple harmonic oscillator. Theory of forced vibrations and resonance – mechanical and electrical examples of resonance. Superposition of SHMs, theory of Lissajous figures. 6Hrs

7. *WAVES*:

Characteristics of wave motion - derivation of general equation of one dimensional progressive wave – differential equation of a wave – complex representation of a wave. Phase of a wave, wave front, expression for intensity of progressive wave(Derivation). Wave groups – phase velocity and group velocity – relation between them. Brief discussion of different types of waves (mechanical waves, seismic waves , water waves and matter waves). 6Hrs

8. *SOUND*:

Velocity of longitudinal waves : 1) in a gas. Newton's formula, derivation. Laplace correction – variation of pressure in a sound wave. 2) Velocity of longitudinal waves in a rod. Theory of

beats.Expression for velocity of transverse waves in a stretched string-derivation. Theory of stationary waves (theory). Doppler Effect- brief explanation.

6 Hrs

NOTE : Sufficient numbers of problems are to be worked out in each section which would enhance the understanding of the subject.

REFERENCES :

- 1) Heat - D.S. Mathur.
- 2) Heat and thermodynamics -Brijlal and Subramanyam.
- 3) Physics volume – I - Halliday and Resnik.
- 4) Berkely course in Physics - volume – I.
- 5) Sound - Khanna and Bedi.
- 6) Refresher course in Physics volume – II - C.L. Arora.
- 7) University Physics – Sears and Zemansky.
- 8) Physics of waves and oscillation - Bajaj.
- 9) Fundamentals of Physics - Halliday and Resnik.
- 10) Heat -G.K.Nokes.
- 11) Treatise on heat – Saha and Srivatsava.**

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PRACTICALS –II

(One experiment per week to be conducted in 3 hours duration)

- 1) q' by Single Cantilever - graphical method.
- 2) ' q ' by Koenig's method - graphical method.
- 3) Torsion pendulum – M.I of irregular body and rigidity modulus.
- 4) Parallel axes theorem – using bar pendulum.
- 5) Static torsion - rigidity modulus - graphical method.
- 6) Frequency of A.C bysonometer - graphical method.
- 7) Helmholtz resonator – Velocity of sound.
- 8) Platinum resistance thermometer- determination of unknown temperature.
- 9) Stefan's – Boltzmann's law – verification using meter bridge.
- 10) Thermal conductivity of a good conductor –Searle's method.
- 11) Thermal conductivity of a bad conductor – Lees and Charlton's method.
- 12) Searle's double bar – q , n , k and Q .
- 13) Interference of sound waves – Quinke's method - Velocity of sound
- 14) ' q ' by cantilever oscillation – graphical method.

NOTE:

1. Suitable and relevant experiments may be included.
2. Experiments mentioned in I and II semester may be redistributed depending upon the facilities available in the laboratory.
3. Minimum of 8 experiments should be done in each practical.
4. Experiment should be elaborative so as to extend for 3 hours duration.
5. Error estimation may be included for few experiments.

THIRD SEMESTER (PAPER- III)

OPTICS AND ELECTROSTATICS

(4 hours of lecture per week)

60 Hours

1. GEOMETRICAL OPTICS:

Optical path, Fermat's principle – statement and explanation. Derivation of Snell's law of refraction using Fermat's principle. Cardinal points: Mention of Gauss sign conventions. Meaning of thick lens. Definition and explanations of cardinal points – focal points, principal points and nodal points and corresponding planes, properties of these points and planes. Combination of two thin converging lenses not in contact as an example of combination of two optical systems. Defects of lenses: Abberations – types, chromatic aberration. Achromatisation of two thin lenses not in contact (derivation). Mention of condition for two thin lenses in contact. Monochromatic aberrations – mention of five types and brief explanation – problems.

8 Hrs

2. OPTICAL INSTRUMENTS:

Eye-pieces, Huygen's and Ramsden's eye-pieces - construction, expression for equivalent focal length (derivation), correction for aberrations, positions of principal and focal planes (no derivation). Comparison.

3 hrs

3. WAVE THEORY OF LIGHT:

Wave front, Huygen's principle, explanation of advance of wave front using concept of the secondary waves. Refractive index in terms of velocity (taking refraction of a spherical wave front at a plane surface). Mention of Experimental confirmation of wave theory. Derivation of lens maker's formula in the case of double convex lens using spherical wave front.

3 Hrs

4. INTERFERENCE OF LIGHT:

Review of Young's double slit experiment, coherent sources, conditions for interference. Biprism - explanation, expression for fringe width. Explanation of measurement of distance between two coherent sources ($d = \sqrt{d_1 d_2}$). Lloyd's mirror –brief explanation, comparison of interference pattern with Biprism. Interference in thin films – reflected system – derivation, transmitted system

(qualitative). Complimentary nature of the two patterns. Interference due to an air wedge- expression for band width (or wavelength) – derivation. Theory of Newton's rings – reflected system, determination of wavelength and refractive index of a liquid- theory, problems.

Michelson's interferometer – construction and working, formation of interference pattern, Conditions for circular, straight fringes, mention of fringes of equal inclination (Haidingers fringes) and thickness. Applications - determination of wavelength λ and difference in wavelength $d\lambda$ - Problems. Interference filters (qualitative).

11 Hrs

5. DIFFRACTION OF LIGHT:

Introduction, Types of diffraction. Fresnel's half period zones, expression for radii- (derivation) – Explanation of rectilinear propagation of light. Zone plate – principle, explanation (qualitative). Expression for focal length (no derivation), comparison of zone plate and convex lens. Fresnel's diffraction at a straight edge – positions of maxima and minima, expressions (derivation), graphical representation of variation of intensity in the diffraction pattern. Diffraction at a straight wire (qualitative). Plane transmission grating – normal and oblique incidence (derivation). Dispersive and resolving power of a grating (qualitative) comparison of grating and prism spectra. Problems.

11 Hrs

6. POLARISATION OF LIGHT:

Double refraction in a uniaxial crystal. Optic axis. Mention of biaxial crystals. Principal refractive indices – Huygen's construction for O and E wave fronts in the case of optic axis in the plane of incidence and parallel to crystal surface – oblique and normal incidence (in detail). Retarding plates – production with theory, derivation of general equation for an ellipse and discussion of different cases, expression for the thickness of quarter and half wave plates (mention) – problems. Production and detection of linearly, circularly and elliptically polarized light, (qualitative explanation). Optical activity- Fresnel's theory. Kerr and Faraday Effect (brief explanation and comparison).

8 Hrs

ELECTROSTATICS:

7. SCALAR AND VECTOR FIELDS:

Concept of scalar and vector fields: Del operator – gradient of scalar function – physical significance. Divergence and curl of a vector function - physical significance with examples, problems. Laplacian

operator-line, surface and volume integrals of a vector function, examples. Gauss divergence theorem, Stokes theorem and their physical meaning (no derivation). Proof of $\text{curl grad } \phi = 0$ and $\text{div curl } A = 0$.

4 Hrs

8. ELECTRIC FIELD AND POTENTIAL : *Electrostatic field, electric flux, expression for flux, Gauss theorem in electrostatics, (both differential and integral form). Application to deduce the expression for the the field near a) charged conductor and force per unit area of its surface (derivation of both). Coulomb's law from Gauss law (derivation) – equivalence of two laws.*

The Electric Potential: *Concept of electric potential, Electric field as the negative gradient of potential. Proof of $E = -\text{grad } V$. (from $d\phi = \nabla\phi \cdot dr$ and $E \cdot dr = -dV$.)Mention of Poisson and Laplace equations, uniqueness theorem (statement).*

Work and Energy in Electrostatics: Potential energy. The energy of a continuous charge distribution. (no derivation). Energy density in an electrostatic field, derivation from the example of a parallel plate capacitor.Loss of energy due to sharing of charges between two conductors (derivation by taking a capacitor).

5 Hrs

9.ELECTRIC DIPOLE:

Dielectric Materials: Basic terms, types of polarization in Dielectric Materials . Equation for Potential and field due to a dipole in polar coordinates(derivation). Lorentz local field (derivation) Relation between D and P. $D = \epsilon_0 E + P$.(derivation from parallel sided slab in an electric field). Definition and meaning of dielectric susceptibility. Brief account of para and ferro electric materials.Clausius – mossotti equation (no derivation).Concept of electrical images- Application to a point charge near the surface of a conducting plane (equation for \vec{E} derivation).

7 Hrs

REFERENCES:

- 1) Optics- Brijlal and Subramayam
- 2) Optics and Atomic physics – D.P Khandelwal.
- 3) Optics and Atomic physics – Satya prakash
- 4) Electricity and Magnetism – K.K. Tiwari
- 5) Physics Volume II – Halliday and Resnick

- 6) Optics – R. Murughesan
- 7) Electricity and Magnetism - Brijlal and Subramayam
- 8) Optics – Ajoy Ghatak
- 9) Fundamentals of Physics – Jenkins and White
- 10) Electricity and Magnetism – D.N Vasudeva
- 11) Berkely Physics course – Volume –II

PRACTICALS –III

(One experiment per week to be conducted in 3 hours duration)

- 1) Interference at an air wedge – determination of thickness.
- 2) Newton’s rings – determination of radius of curvature.
- 3) Bi-prism – determination of wavelength.
- 4) Diffraction at a straight wire - determination of diameter.
- 5) Diffraction grating – minimum deviation method- mercury spectrum.
- 6) Polari meter – Specific rotation of sugar.
- 7) Resolving power of a telescope.
- 8) Resolving power of a grating.
- 9) Diffraction at a straight edge - determination of wavelength.
- 10) L-B photometer – inverse square law & absorption coefficient of glass plate.
- 11) Charging and discharging of a capacitor- calculation of energy dissipation.
- 12) de-Sauty’s bridge – verification of law combination of capacitances.
- 13) Impedance of series R-C circuit - determination of frequency of A.C graphical method.

NOTE:

1. Suitable and relevant experiments may be included.
2. Experiments mentioned in III and IV semester may be redistributed depending upon the facilities available in the laboratory.
3. Minimum of 8 experiments should be done in each practical.
4. Experiment should be elaborative so as to extend for 3 hours duration.
5. Error estimation may be included for few experiments.

IV SEMESTER (PAPER IV)

ELECTRICITY AND ELECTROMAGNETIC THEORY

(4 hours of lecture per week)

60 Hours

1. TRANSIENT CURRENTS:

Growth and decay of current in a series L-R circuit fed with direct emf. Derivation of expression for current in (growth – decay) – graphical representation, explanation of time constant.

Charging and discharging of a capacitor through a resistance – derivation of expression for charge variation in a R-C circuit, mention of expression for voltage and current variation – explanation of time constant in each case.

Series L-C-R circuit fed with direct emf – qualitative discussion- mention of expression for transient charge, condition for oscillation and expression for frequency(no derivation), Problems.

6Hrs

2. ALTERNATING CURRENTS:

Types of AC (sinusoidal and non-sinusoidal) – derivation of expression for mean and RMS values of sinusoidal AC and relation between them. Complex representation of AC using j - operator, phase factor ($\omega t - \theta$). Response of LR, CR and LCR circuits fed with alternating emf – derivation of expressions for current and impedance (using j - notation), phase relation between current and applied emf.

Series resonance – discussion from the expression for current , explanation of half power frequency, band width and quality factor, expression for quality factor in terms of f_1 , f_2 and f_r (derivation), significance of Q – factor, effect of resistance, frequency and quality factor. Voltage magnification.

Parallel resonance (LR in parallel with C) expression for current and impedance (no derivation), current magnification. Comparison between series and parallel resonance. Power in an AC circuit- derivation of expression for average power, power factor and its significance. Skin effect (qualitative). Comparison of A C and D C w.r.t characteristics and applications. Problems.

12Hrs

3. NETWORK ANALYSIS:

Mesh current method of circuit analysis. Thevenin's and Norton's theorems – DC and AC statements (proof for DC circuit) – explanation using DC circuits, problems involving both DC and AC circuits.

Maximum power transfer theorem – AC and DC statements, proof for DC circuit, and problems with DC circuits. Problems

7 Hrs

4. FREQUENCY FILTERS:

Types of filters– derivation of expression for cut-off frequency in case of High pass and low pass RC filters. Band pass and band stop filters (qualitative). Application of frequency filters(mention). 2 Hrs

5. RECTIFIERS: Review of rectifiers, Role of filters in rectifiers – C,L and π section filters(qualitative). Zener diode- construction and working – V-I characteristics- zener breakdown voltage. Regulated power supply -Construction and working using zener diode-voltage regulation in case of a) input voltage variation (in detail) and b) load variation (qualitative). Bleeder resistance –action.Problems.

5Hrs

6. ELECTRICAL MEASUREMENTS:

Ballistic Galvanometer – construction and theory of B.G. Charge sensitivity – origin of damping and damping correction. Logarithmic decrement, expression for decrement (derivation). Applications of BG.

Theory of Anderson's and de Sauty's bridges.

Cathode ray oscilloscope – construction of CR tube – block diagram of CRO- brief explanation of function of each block.Time – base with simple circuit – uses of CRO.Measurement of voltage and frequency (using time base and Lissajous figures).Watt meter – watt hour meter (brief explanation).

8Hrs

7. ELECTROMAGNETISM:

Explanation of magnetic field as that produces force on a moving charge – distinction between B and H – Lorentz force on a charge in an EM field, mention of expression $F = q (E + V \times B)$ and its explanation. Origin of induced emf in a conducting rod moving in a magnetic field (from force on charged particles).

Ampere's circuital law – statement – proof from line integral over an irregular path which encloses current -comparison of Gauss's law and Ampere's law – application of Ampere's law to calculate magnetic fields due to (a) a straight long conductor (b) a long solenoid. Characteristics of magnetic field- Div B = 0 (qualitative)- concept of magnetic vector potential (brief). Current loop as a magnetic dipole, illustration from the magnetic loop due to a circular current loop- expression for torque on a magnetic dipole in a magnetic field.

9Hrs

8. MAXWELL'S FIELD EQUATIONS:

Deduction of equations from empirical laws of Gauss, Faraday and Ampere.Limitations of Ampere's law, Maxwell's concept of displacement current, derivation of expression for displacement current density from charging of a capacitor – significance of displacement current.

Derivations of EM wave equation(for E and B) for free space, velocity of EM waves, light as an EM wave, EM wave equation for dielectric medium, expression for refractive index. Plane wave solutions of EM wave equation in free space –characteristics of EM waves, transverse nature of EM waves

(derivation), relation between E and B components(qualitative)- to show that E and B are perpendicular to each other- diagram of a plane Polarized EM wave. Poynting theorem, Poynting vector, significance of Poynting vector. Propagation of EM waves in isotropic and dielectric media.

11Hrs

NOTE : Sufficient numbers of problems are to be worked out in each section which would enhance the understanding of the subject.

REFERENCES:

- 1) Introduction to Electrodynamics – David J Griffiths.
- 2) Electricity and magnetism – Mahajan A.S and Rangwala.
- 3) Electricity and magnetism – Berkeley physics course Vol II.
- 4) Fundamentals of physics – Halliday, Resnick and Walker- sixth edition.
- 5) Electrodynamics – Jackson.
- 6) Electromagnetism – B.B. Laud.
- 7) Fundamentals of Electricity and magnetism – D.N Vasudeva.
- 8) Electricity and magnetism – Brijlal and Subramanyam.
- 9) Feynman lectures – vol II.
- 10) Electricity and magnetism – K.K.Tiwari.
- 11) Fundamentals of Electricity and magnetism – Arthur F Kip.
- 12) Electricity and magnetism –R. Murugheshan.
- 13) Text book of Electronics -Basavaraj.B.
- 14) Basic electronics–Thereja.
- 15) Text book of electrical technology – B.L.Thereja.

PRACTICALS – IV

(One experiment per week to be conducted in 3 hours duration)

- 1) Series resonance.
- 2) Parallel resonance.
- 3) Self-inductance – Anderson's bridge.
- 4) Dielectric constant – RC circuit.
- 5) Low pass and high pass filters – cut-off frequency.
- 6) Helmholtz tangent galvanometer- Reduction factor 'K' and BH
- 7) Field on the axis of a circular coil – both sides.
- 8) Network theorems–Maximum power transfer, Thevenin's & Norton's theorems.
- 9) Half wave rectifiers- without & with filters
- 10) Full wave rectifiers- without & with filters. (using two diode)
- 11) Current sensitivity of BG.
- 12) Diffraction grating – normal incidence.
- 13) Cauchy's constants – graphical method & direct calculation for two wavelengths.
- 14) Lloyd's mirror – determination of wavelength.
- 15) Cornu's fringes – elastic constants.
- 16) Thermo emf of a thermocouple using potentiometer – melting point.
- 17) Measurement of L and C by equal voltage method.

NOTE:

1. Suitable and relevant experiments may be included.
2. Experiments mentioned in III and IV semester may be redistributed depending upon the facilities available in the laboratory.
3. Minimum of 8 experiments should be done in each practical.
4. Experiment should be elaborative so as to extend for 3 hours duration.
5. Error estimation may be included for few experiments.

FIFTH SEMESTER (PAPER-V)

ATOMIC PHYSICS, SPECTROSCOPY, LASERS AND ASTROPHYSICS

4 hours of lecture per week

60 Hours

1. ELECTRON:

- i) Properties of electron, e/m of electron by Thomson's method, Charge of an electron by Millikan's oil drop experiment.

4 Hrs

2. ATOMIC STRUCTURE:

- i) Different types of atomic model- Thomson's atomic model, Rutherford's atomic model, Bohr's atomic models and Sommerfeld's atomic model.(Qualitative explanation of salient features of four model success and limitations - explanation)
- ii) Mention the expression for radius of the orbit, energy of the electron in various orbits, wave number and Rydberg constant according to the Bohr's model(no derivation).- explain with more emphasis on the wavelengths of atomic spectra and Rydberg constant value.
- iii) Effect of finite mass of the nucleus on atomic spectra (with derivation).
- iv) Ratio of masses of electron and proton- using Rydberg constant. 5

Hrs

3. VECTOR ATOM MODEL:

- i) Postulates of vector atom model- a) Space quantization b) Spinning of electron. Detailed discussion of space quantization and spinning of electron.
- ii) Stern and Gerlach experiment –Principle, theory and experimental study.
- iii) Relation between orbital magnetic momentum and the orbital angular momentum of an electron (derivation). Expression for Bohr magnetron.
- iv) Spin magnetic moment of an electron (qualitative discussion only).
- v) Quantum numbers associated with vector atom model (brief explanation of each).
- vi) Pauli's exclusion principle- Statement, explanation and its significance.
- vii) Maximum number of electrons in a sub shell (orbital) and in a shell (orbital)- expression, derivation using Pauli's exclusion principle.
- viii) Spin-orbit coupling: Types L-S coupling and $j - j$ coupling. Brief explanation of each and figure.

9 Hrs

4. OPTICAL SPECTRA:

- i) Spectral terms, spectral notations (both single electron atom and many electron atoms).
- ii) Selection rules and intensity rules for the spectral lines.

- iii) Fine structure of spectral lines- Explanation, discuss by taking Sodium D lines as example.
- iv) Zeeman effect-Types of Zeeman Effect, experimental study of Zeeman Effect. Larmor precession- Statement and explanation. Quantum mechanical explanation of normal Zeeman Effect- expression for Zeeman Shift. Quantum mechanical explanation of anomalous Zeeman Effect- Expression for Lande 'g' factor.
- v) Paschen–Back effect and Stark effect (qualitative only)

9 Hrs

5. MOLECULAR SPECTRA:

- i) Different regions of molecular spectra- origin of molecular spectra.
- ii) Pure rotational spectra of diatomic molecules- theory, expression for rotational constant.
- iii) Vibrational spectra of a diatomic molecule.
- iv) Vibrational – rotational spectra of a diatomic molecule (qualitative explanation).
- v) Electronic spectra (qualitative).
- vi) NMR and ESR – principle and applications.

7 Hrs

- #### 6. SCATTERING OF LIGHT: Coherent and incoherent scattering (brief explanation). Rayleigh scattering (brief explanation). Blue colour of the sky (Reasoning). Raman Effect – Raman spectra, Raman lines- Stoke's and antistoke's lines. Experimental study of Raman Effect. Quantum theory of Raman Effect. Characteristic properties of Raman lines, intensity and polarization of the Raman lines – depolarization factor. Application of the Raman Effect (qualitative).

6 Hrs

- #### 7. LASERS: Spontaneous and stimulated emissions. Einstein's coefficients (no derivation). Laser action–condition for laser action, active medium, population inversion, pumping – different methods of pumping. Characteristics of laser light. Ruby and He-Ne lasers – construction, working and energy level diagrams. Semiconductor laser – construction and working. Applications of lasers in Communication – OFC, Scientific research, industries, medicine, military operations and computers (explain all application in brief). HOLOGRAPHY: Hologram – principle of recording and reconstruction, properties and applications of hologram. 8Hrs

- #### 8. ASTROPHYSICS: Stars – Distance of a star – stellar parallax method, units of astronomical distances- AU, Ly, Parsec and their relations. Luminosity, brightness of a star and their relations. Magnitude of a star-apparent and absolute magnitude of a star-Relation between them. Spectral classification of stars (as per different surface temperature). H-R diagram- explanation about the diagram. Calculation of mass, mean density, radius and temperature of sun. Derivation of the expression for internal

temperature of a star. Expression for Internal pressure of a star (no derivation). Photon diffusion time- explanation. Mass-Luminosity relation for a star (derivation) and explanation. The relation between life time of a star and it's mass. Sources of stellar energy (qualitative).

Evolution of stars – conditions for main sequence star, red giants, white dwarfs and neutron stars and black holes.

9 Hrs

9. COSMOLOGY: Expansion of universe, Hubble's law-statement and explanation, Age of the universe using Hubble's law. Big Bang theory-explanation, experimental evidence for Big Bang model- CMBR, Nucleo synthesis(qualitative).

3 Hrs

FIFTH SEMESTER (PAPER-VI)

GENERAL & SPECIAL THEORY OF RELATIVITY, STATISTICAL MECHANICS,

QUANTUM MECHANICS, NANO PHYSICS.

(4 hours of lecture per week)

60 Hours

1. SPECIAL THEORY OF RELATIVITY:

Concept of Newtonian mechanics, space, time, mass, frame of reference, Newtonian relativity, Galilean concept, Galilean transformation equations, Relativity concept of physical quantities. Ether hypothesis, Michelson – Morley experiment – experimental setup, principle, equation for path difference (no derivation), significance of null result of experiment, (absoluteness of velocity of light), postulates of Einstein special theory of relativity. Lorentz – transformation equations (no derivation). Length contraction, time dilation, Relativity of simultaneity, velocity addition theorem (simple derivation).

Relativistic dynamics: Mass variation (no derivation), mass – energy relation (derivation), relativistic expression for kinetic energy, energy - momentum relation. Classical and relativistic concepts of space and time, Minkowski's world, concept of four vectors, $(xyz, \sqrt{-1} ct)$, world line, space-time interval and its invariance.

15 Hrs

2. GENERAL THEORY OF RELATIVITY:

Inertial and gravitational mass, principle of equivalence, curved space time, Einstein theory of gravitation (brief). Experimental verification of general theory of relativity- brief explanation of effect of gravitational field: on a ray of light, on path of a planet about the sun and relativistic Doppler effect.

5 Hrs

3. QUANTUM MECHANICS:

Wave particle duality, de Broglie concept of matter wave, de Broglie wavelength, group velocity and phase velocity of de-Broglie waves, characteristics of matter waves, Davisson – Germer experiment- experimental set up and procedure (derivation).

Heisenberg uncertainty principle – physical significance – non-existence of electrons in the nucleus – radius of Bohr' orbits – γ ray Microscope experiment – wave function, physical significance, Born interpretation of wave function. Basic postulates of wave mechanics

(statement and brief explanation). Quantum mechanical operators – position, energy, linear momentum and angular momentum. Commutator of position and momentum operators. Time Independent and Time Dependent Schrodinger wave equations (both derivations)– Normalization – properties, Eigen values, – Eigen functions. Application of Schrodinger Time Independent wave equation – Free particle in one dimensional potential box (Derivation for E_n and Ψ_n), zero point energy. Three Dimensional potential box (Qualitative). Simple harmonic oscillator and hydrogen atom - Eigen energy and functions (brief discussion)

Problems 20 Hrs

4. STATISTICAL MECHANICS:

Necessity of statistical approach, microscopic and macroscopic states, ensembles, probability, thermodynamic probability, phase-space, fundamental postulates of statistical mechanics, , equilibrium state, density of states. Types of statistical laws – distinguishing features of three statistical systems with examples. Classical statistics- M-B statistical distribution function(no derivation). Quantum statistics: F-D and B-E statistical distribution functions (both derivation). Comparison of MB-BE-FD statistics. Energy density Vs frequency graph of Black body radiation (brief explanation) -derivation of Planck's law from B-E statistics.

10 Hrs

5. NANO PHYSICS:

Concept of Nanotechnology, material science, Nanotechnology, nano structural materials, graphite. Properties of nanomaterial : mechanical, chemical, magnetic, - applications. Fullerenes (carbon- 60), carbon nanotubes - production by air discharge method, properties. Nano electronics;- semiconductor structures, quantum wells, quantum wires, quantum dots, quantum computers, applications. Nano medicines (brief explanation)

7 Hrs

6. LIQUID CRYSTALS: Classification, properties and applications.

2 Hrs

NOTE : Sufficient numbers of problems are to be worked out in each section which would enhance the understanding of the subject.

REFERENCES:

- 1) Modern physics – R.Murugheshan and KiruthigaPrasath.
- 2) Berkeley physics course – Vol 3, 4 and 5.
- 3) Theory of space, time and gravitation- S.G.Pimpale.
- 4) Special theory of relativity – Resnick.
- 5) Lasers and Non-linear optics – B.B.Laud.
- 6) Lasers – Tyagarajan and Ghatak.
- 7) Quantum mechanics – Arul das.
- 8) Introductory quantum mechanics – Y.R.Waghmare.
- 9) Fundamentals of physics – Halliday, Resnick and Walker- sixth edition.

V SEMESTER PRACTICAL – V

(One experiment per week to be conducted in 3 hours duration)

1. e/m of an electron –Thomson Method –graphical calculation
2. Capacity of condenser using B.G –graph of deflection Vs voltage
3. LCR circuit –measurement of frequency voltage and phase difference using CRO
4. Full wave bridge rectifier –display of waveform, ripple factor, with and without filter.

Graph I_{dc} Vs V_{dc}

5. Hysteresis curve (B-H loop) for a ferromagnetic substance
6. Absorption spectrum of KMnO_4 – Determination of wavelength λ
7. G.M Counter –Characteristics $(N \pm \sqrt{N})$ Vs V graph.-Operating Voltage.
8. LASER –wavelength and particle size by diffraction grating
9. Thermionic emission- determination of work function.
10. Triode characteristics – anode and mutual characteristics – Determination of

r_p, g_m and μ

NOTE:

- 1) Suitable and relevant experiments may be included.
- 2) Experiments mentioned in V and VI semester may be redistributed depending upon the facilities available in the laboratory.
- 3) Minimum of 8 experiments should be done in each practical.
- 4) Experiment should be elaborative so as to extend for 3 hours duration
- 5) Error estimation may be included for few experiments.

V SEMESTER PRACTICAL – VI

(One experiment per week to be conducted in 3 hours duration)

1. Thermionic emission- determination of work function.
2. Determination of Planck's constant and work function using photo tube.
3. High resistance by leakage –graphical and direct method - correction for leakage resistance of capacitor.
4. Dielectric constant using R C circuit.
5. Verification of Malu's law using Laser light.
6. Lissajousfigures-Determination of unknown frequency.
7. G M Counter – Nuclear counting Statistics.
8. Verification of probability theorems using 1,2 and 10 coins.
9. LDR- absorption coefficient of glass using laser or ordinary light.
10. Solar cell characteristics.
11. Zener diode as voltage regulator (input voltage and load resistance variation)

NOTE:

1. Suitable and relevant experiments may be included.
2. Experiments mentioned in V and VI semester may be redistributed depending upon the facilities available in the laboratory.
3. Minimum of 8 experiments should be done in each practical.
4. Experiment should be elaborative so as to extend for 3 hours duration.
5. Error estimation may be included for few experiments.

SIXTH SEMESTER (PAPER-VII)

SOLID STATE PHYSICS AND ELECTRONICS

(4 Hours Of Lecture Per Week)

60

Hours

1. Crystallography: Introduction, crystal lattice and translation vectors, unit cell, Bravais lattice. Types of lattice – 2-D and 3-D lattice. Lattice directions and planes. Miller indices- Bravais lattice in 3D- crystal systems , inter planar spacing- relation with (h,k,l) and intercepts.

Symmetry operations- brief discussion, concept of point and space group.

X-rays- introduction, Production-brief explanation, Types of X-rays-soft and hard –X-rays (mention).

Scattering Of X-Rays: Laue's work. Bragg's law of diffraction, derivation of $2d\sin\theta = n\lambda$.

Compton Scattering: Explanation, equation for Compton shift (derivation) – discussion of different cases, comparison of Raman effect and Compton effect.

X-Ray Spectra: Continuous spectra- λV graph and $V V_{sv_{max}}$ graph, origin due to inverse photo electric effect-Duane-Hunt empirical law.

Characteristic spectrum- Origin due to electronic transition.(K,L,M,N shell diagram) Mosley's law, explanation using Bohr's theory. Significance of Mosley's law- arrangement of periodic table, determination of atomic number and position of an element (mention).

10 Hrs

2. SPECIFIC HEAT OF SOLIDS: Dulong and Petit's law – statement and derivation from classical theory.- Einstein's theory – assumption, equation for specific heat capacity (no derivation), merits and demerits. Debye's theory: Assumption- derivation of Debye's formula, application to (i) High temperature- agrees to Dulong-Petit's law, (ii) Low temperature – Debye's T^3 law, problems.

4 Hrs

3. FREE ELECTRON THEORY OF METALS: Limitations of classical theory, Quantum Free Electron Theory of Metals- Sommerfeld's model- assumptions, energy state of free electrons in metal – obey F-D Statistics and Pauli's principle. Density of states, derivation of expression for Fermi energy, - Average energy at absolute zero, $E_0 = 3/5 E_f(0)$, mention of Fermi velocity and Fermi temperature.-application to electrical conductivity- qualitative explanation- collision time τ as a function of E_f , mention of equation $\sigma = \frac{ne^2\tau(E_f)}{m}$.

6 Hrs

4. Band theory of solids: Brief review of concept of energy bands and classification of solids.

Semiconductors: Intrinsic semiconductor – equation for concentration of charge carriers in valence band and conduction band (for n and p - derivation).

Law of mass action- $np = n_i^2 = AT^3 e^{-E_g/kT}$. Equation for Fermi level. Fermi level lies at the centre of forbidden gap. Statement and derivation of equation for electrical conductivity. $\sigma = |e|n(\mu_n + \mu_p)$.

Extrinsic semiconductor : P and N type – explanation using energy bands – diagram, formation of acceptor and donor levels (acceptor level in p type and donor level in n type), equation for Fermi level- derivation in both cases (E_f for n & p), temperature dependence of Fermi level. Equation for electrical conductivity. $\sigma_n = e N_d \mu_n$, $\sigma_p = e N_a \mu_p$ - brief explanation.

Hall Effect: Theory- expression for hall voltage and hall coefficient, relation between R_H and μ .
Mention of applications.

9 Hrs

5. MAGNETIC PROPERTIES OF MATERIALS: Dia-, Para-, Ferri- and Ferromagnetic Materials. - Origin of dia, para and ferromagnetism on the basis of electronic structure of atoms. Variation of susceptibility with temperature. Classical Langevin's theory of dia – and Paramagnetic Domains.
Ferromagnetism- Weiss theory of Ferromagnetism and hysteresis. Domains- origin and effect due to magnetism, hysteresis- explanation, significance of hysteresis loss, application of ferromagnetic materials.

5 Hrs

4. SUPERCONDUCTIVITY: Experimental observations – Transition temperature, persistent current, Isotope effect, Meissner effect. – Principle of magnetic levitation. (Qualitative)

Effect of magnetic field on super conductor - (M Vs H graph) – critical field. Type-I and Type-II super conductors - mention of application.

Theory of super conductivity: BCS theory – qualitative explanation – concept of phonon field in a lattice, formation of cooper pair, exchange of phonons. Brief explanation of energy gap due to super conductivity

High temperature superconductors - Recent advances, Applications. (1) construction of electromagnets, (2) transmission of electric power (super conducting cables), (3) magnetic shielding.

5 Hrs

5.SOLID STATE ELECTRONICS:

Transistors: Different configurations, biasing- self biasing of CE circuit – voltage divider method – circuit operation, input and output equations.

Hybrid parameters- Definition for a linear circuit- notation, equations and equivalent circuit for CE configuration.

Transistor as an amplifier in CE mode- practical circuit of single stage CE amplifier- circuit operation, DC load line, Q-point, AC load line. Derivation of expression for Z_i , A_v , A_i and A_p in terms of h-parameters, approximation. Frequency curve response and band width.

Oscillators:Basic LC oscillatory circuit - damped and undamped oscillations. Feedback amplifier, positive and negative feedback, comparison (with respect to gain, stability and band width), Barkhausen's criterion for sustained oscillation - Explanation using the equation $A_F = A/(1 - A_m)$. Phase-shift oscillator- Circuit diagram, principle, circuit operation, equation for o/p frequency (no derivation), advantages.

Multivibrators- distinguishing features of different types,(Mono, Bi and Astable), uses of multivibrators. Astablemultivibrators– transistorized circuit, circuit operation, waveform, switching time and frequency of oscillation (No derivation).

Integrated circuits:Types of Integrated circuits (brief) and their advantages and disadvantages(comparison with discrete components with respect to size, power consumption and reliability)

Field effect transistor: Types (mention). JFET-construction of N-channel JFET, principle of working (qualitative), common source configuration – circuit diagram, characteristics (drain and mutual), definition of r_d , g_m and μ . Application of FET (Mention).Comparison with BJT.

Operational amplifier: Symbol, Characteristics of an Ideal and Practical Op-Amp (IC 741), Open-loop & Closed-loop Gain. (mention of R_i , R_o , A_v , Band width, $CMRR$).Concept of Virtual ground, Applications of Op-Amps: (1) Inverting and Non-inverting Amplifiers, equation for gain (derivation - inverting and non-inverting cases), Frequency response and band width. (2) Adder-half and full adder (3) Subtractor, (4) Differentiator, (5) Integrator.(BRIEF EXPLANATION OF EACH)

13 hrs

6.Digital Electronics:Brief review of logic gates. Realization of basic gates using NAND and NOR gates. EX-OR gate – symbol, truth table. Mention of IC gates(Ex : 7400 and 7402).

Boolean algebra: Basic laws (statement) De-Morgan's theorem –statement and brief explanation. Boolean expressions –simple equations and their realization using gates- problems on writing logic diagrams, logic equations, truth table and simplification of equation.

Flip-Flops: Basic principle of Flip-Flop circuits. RS Flip-Flop –symbol, brief explanation using logic diagram and truth table, draw backs. Clocked RS flip-flop (principle only) truth table. J-K flip-flop s in detail. M/S J-K flip flop (brief discussion), brief discussion of registers and counters

5 Hrs

7. Communication: Radio communication: Modulation: Review of principle, frequency spectrum of AM. Equation for AM modulation (no derivation) – Current and power calculation. FM Modulation –Principle (brief). Comparison of AM and FM modulation, AM transmitter- block diagram, explanation. AM receiver- Super Heterodyne Receiver- block diagram, explanation, characteristics of radio receiver, sensitivity, selectivity, and fidelity (brief). Advantages of SHR.

5 Hrs

Note: Sufficient numbers of problems are to be worked out in each section which would enhance the Understanding of the subject.

Sixth Semester

Paper VIII: Nuclear and particle physics

(4 hours of lecture per week)

60

hours

- 1. General Properties of Nuclei:** Constituents of nucleus and their Intrinsic properties, quantitative facts about size, mass, charge density (matter energy), binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/A plot, angular momentum, parity, magnetic moment, electric moments, nuclear excited states.

5 hrs
- 2. Radioactivity:** stability of nucleus; Law of radioactive decay; Mean life & half-life; Law of successive disintegration- radioactive equilibrium – Transient and Secular equilibrium. Radioactive dating. (a) Age of earth, (b) Age of rock Carbon dating (c) Estimate the age of wood and Problems.

5 Hrs
- 3. Radioactivity decay:**(a) Alpha decay: basics of α -decay processes, theory of α -emission, Gamow theory(Qualitative) Geiger- Nuttall law, (b)Beta β -decay: energy kinematics for β -decay, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission & kinematics, internal conversion. Mossbauer effect. (in brief)

6 Hrs
- 4. Detector for Nuclear Radiations: Classification of detectors. Gas detectors:** GM Counter. (in detail).Scintillation counter- Basic principle of Scintillation. Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors: HpGe detector (in Brief)

5 Hrs
- 5. Particle Accelerators:** Accelerator facility available in India: Van-de Graff generator (Tandem accelerator), Linear accelerator (qualitative) Cyclotron and Betatron (in detail) Standard Model of Particle physics, Brief Discussion of LHC and LIGU.

5 Hrs
- 6. Nuclear Reactions: Types of Reactions, Conservation Laws, kinematics of reactions, Q-value, reaction rate, reaction cross section, Concept of compound and direct reaction, resonance reaction.** Artificial radioactivity- artificial transmutation.

5Hrs
- 7. Nuclear forces and models :**
Nuclear force: Characteristics of nuclear forces, Meson theory of nuclear forces.

Nuclear models: Liquid drop model approach, semi empirical mass formula and significance of various terms, condition of nuclear stability. Shell model- basic assumption of shell model, Evidence for nuclear shell structure, nuclear magic numbers.

5 Hrs

- 8. Fission and fusion** - Types of fission – distribution of fission fragments – liberation of neutrons. Fissile and fertile materials. Nuclear reactor: classification, power reactor (in Detail), Four factor formula (Derivation)
Nuclear fusion –thermonuclear reactions – sources of stellar energy. p-p chain reaction, CNO chain reactions.

5 Hrs

- 9. Interaction of Nuclear Radiation with matter:**Energy loss due to heavy charged particles and electrons passing through matter, Cerenkov radiation, Gamma ray interaction through matter, photoelectric effect, Compton scattering, pair production, neutron interaction with matter.(qualitative)

5 Hrs

- 10. Particle physics:** classification of elementary particles and types of interactions , basic features. Symmetries and Conservation Laws: energy and momentum, angular momentum, parity baryon number, Lepton number, Isospin, Strangeness and charm, concept of quark model, color quantum number and gluons.

6 hrs

- 11. Cosmic Rays:** Discovery, primary and secondary cosmic rays. Altitude, latitude effect, east – west asymmetry. Cosmic ray showers – Bhabha’s theory. Origin of cosmic rays.

3 hrs.

- 12. Renewable energy sources:** : Introduction to energy sources, primary energy sources, secondary energy sources, supplementary source.

Solar energy: Solar energy and its importance, storage of solar energy, solar pond, non convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning.

Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.

5 Hrs

VI SEMESTER

PRACTICAL – VII

(One experiment per week to be conducted in 3 hours duration)

1. FET characteristics – drain and transfer characteristics, determination of r_p , g_m and μ
2. CE amplifier – frequency response, band width and gain band width.
3. OP – AMP: – using IC 741 – inverting amplifier, frequency response, gain calculation for different feedback resistances, - band width and gain band width.
4. Logic gates: Construction and study of AND, OR, NAND, and NOR gates using IC7400
5. Astable multivibrator –using transistor –determination of output frequency and duty cycle.
6. Determination of h-parameter for CE – mode.
7. Phase shift oscillator –using transistor or IC.
8. G.M counter – Verification of inverse square law.
9. Earth inductor –determination of B_H and B_V .
10. RS Flip Flop: Construction using IC and verification of truth table. Demonstration of action of clocked pulse.
11. Rydberg constant – By hydrogen discharge tube or solar hydrogen spectrum
12. Photo tube –Verification of inverse square law of radiation.
13. Frank-Hertz Experiment.

NOTE:

6. Suitable and relevant experiments may be included.
7. Experiments mentioned in V and VI semester may be redistributed depending upon the facilities available in the laboratory.
8. Minimum of 8 experiments should be done in each practical.
9. Experiment should be elaborative so as to extend for 3 hours duration.
10. Error estimation may be included for few experiments.

VI SEMESTER PRACTICAL – VIII

(One experiment per week to be conducted in 3 hours duration)

1. Transistor characteristics.
2. OP – AMP – using IC 741 – non - inverting amplifier, frequency response, gain calculation for different feedback resistances, - band width and gain band width.
3. OP AMP: Filter circuits.
4. Logic gates: Construction and study of AND, OR, NAND, and NOR gates using IC 7402
5. Astablemultivibrator: - using IC -555 – determination of output frequency and duty cycle.
6. Energy gap of semiconductor using meter bridge- determination of unknown temperature (melting point of wax) by graph.
7. Mutual inductance by absolute method using B.G.
8. G.M counter – Absorption coefficient of aluminum.
9. Hall Effect: Measurement of Hall co – efficient.
10. AM – Modulator and demodulator –construction using transistor or IC –measuring depth of modulation.
11. Determination of Fermi energy of copper using meter bridge.
12. FET Amplifier – Common source – frequency response, band width and gain bandwidth

NOTE:

1. Suitable and relevant experiments may be included.
2. Experiments mentioned in V and VI semester may be redistributed depending upon the facilities available in the laboratory.
3. Minimum of 8 experiments should be done in each practical.
4. Experiment should be elaborative so as to extend for 3 hours duration.
5. Error estimation may be included for few experiments



KUVEMPU



UNIVERSITY

SYLLABUS

COURSE: B. Sc. MATHEMATICS

Revised on: 2017-18

With Effective from A/Y: 2018-19

**DEPARTMENT OF PG STUDIES AND RESEARCH IN
MATHEMATICS,**

KUVEMPU UNIVERSITY,

JNANA SAHYADRI,

SHANKARAGHATTA- 577 451

SHIVAMOGGA, KARNATAKA, INDIA.

PHONE; 08282 257310

FAX: 08282 256221

WEB : www.kuvempu.ac.in

**Structure of B.Sc. Mathematics papers**

Semester	Title of the paper		Teaching hrs/week	Duration of Exam (hrs)	IA MARKS	EXAM MARKS	TOTAL MARKS	Semester Total
I	BSM 1	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20*	
II	BSM 2	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20	
III	BSM 3	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20	
IV	BSM 4	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20	
V	BSM 5	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	
	BSM 6	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	
VI	BSM 7	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	
	BSM 8	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	

* In the Practical component out of 20 marks: 15 for practical exam + 3 for viva + 2 for lab record.



Syllabus

B.Sc. Mathematics (Theory and Practicles)

I SEMESTER

Paper - BSM 1: Algebra - I and Calculus - I

Total: 78 Hrs

Matrices: Symmetric and Skew Symmetric matrices, Algebra of Matrices; Row and column reduction, Echelon form, Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form, Cayley-Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem.

02hrs/week=30hrs

Polar Co-ordinates: Polar coordinates, angle between the radius vector and tangent. Angle of Intersection of curves (polar forms), pedal equations. Derivative of an arc in Cartesian, parametric and polar forms, curvature of plane curve-radius of curvature formula in Cartesian, parametric and polar and pedal forms- center of curvature.

Successive Differentiation: nth Derivative of $(ax + b)^m$, $\log(ax + b)$, e^{ax} , $e^{ax} \sin(bx + c)$, $e^{ax} \cos(bx + c)$, $\sin(ax + b)$, $\cos(ax + b)$, Leibnitz theorem (with proof) and applications.

Function of two and three variables: continuity, partial derivatives EULERS Theorem, maxima and minima (Two variables).

03hrs/week=48hrs

Reference Books:

1. Topics in Algebra - I N Herstein, Publisher John Wiley & Sons.
2. University Algebra - N.S. Gopalakrishnan, New Age International (P) Limited
3. Theory of Matrices - B S Vatsa, New Age International Publishers.
4. Matrices - A R Vasista, Krishna Prakashana Mandir.
5. Elements of Real Analysis - Shanti Narayan, S. Chand & Company, New Delhi.
6. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi.
7. Calculus – Lipman Bers, Holt, Rinehart & Winston.
8. Calculus - S Narayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd., vol. I & II.
9. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill., 2008.



PRACTICAL – 1:

Total: 42Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs

(3 hours/ week per batch)

Softwares used: 1. Maxima

2. Scilab

Level - 1: Fundamental Computer Applications

- 1. Word:** Creating documents, saving in personal folders, sending files to the other users through email-id (documents include all kind of mathematical equations with Greek letters, differentiations, integrations, matrices, vectors, etc.).
- 2. Excel:** Creating documents, save in personal folders, sending files through emails to other users (documents contains employees' salaries, students' marks with total, average, division, student attendance list, etc.).
- 3. Power point:** Create power point presentation documents which includes Mathematical equations and solutions, programs copy from Scilab, Maxima etc.
- 4. Mails creation:** Creating email-id through sign up through Google/Yahoo/Rediff etc. attaching files, sending messages to other mail-ids.

3 hrs/week - 12 hrs.

Level - 2: Basics in Scilab and Maxima

1. Procedure of opening Scilab console and Scilab notes.

- Writing mathematic functions and commands on console.
- Writing procedure – syntax in Sci-notes (i) If, (ii) If-else, (iii) nested-if, (iv) while-loop, (v) for-loop with example, (vi) Arrays, etc.

Examples:

- Various commands on Matrices (Addition of matrices, Multiplication of matrices, Inverse of the Matrix, etc.)
- Programs to find the age for eligible to vote.
- Programs to calculate the total and average of marks of students and check the division.
- Program to reduce the given matrix into lower triangular and upper triangular matrices
- Program to find Row reduced echelon form and normal form for given matrices.
- Program to test consistency of system of linear equations and solutions.

3 hrs/week - 15 hrs.

2. Procedure of opening Maxima window for writing commands and programs.

- Writing mathematic functions and commands on Maxima window.
- Writing procedure – syntax in Maxima window (i) If, (ii) If-else, (iii) nested-if, (iv) while-loop, (v) for-loop with example, (vi) Arrays, etc.

Examples:

- Various commands on Matrices (Addition of matrices, Multiplication of matrices, Inverse of the Matrix, etc.)
- Programs to find the age for eligible to vote.
- Programs to calculate the total and average of marks of students and check the division.
- Program to find Eigen values and Corresponding Eigen vectors of the matrix using MAXIMA.



- Program to verify the Cayley-Hamilton theorem for given matrix using MAXIMA
 - Introduction to Maxima and commands for successive derivatives and Leibnitz rule.
- 3 hrs/week - 15 hrs.**
-

II SEMESTER

Paper - BSM 2: Algebra – II and Calculus - II

Total: 78 Hrs

Groups: Definition of a group with examples and properties, Problems there on, Subgroups, center of groups, order of an element of a group, order of a group, cyclic groups, Coset decomposition, Lagrange's theorem and its consequences. Fermat's theorem and Euler's theorem.

02hrs/week=30hrs

Theory of plane Curves: Asymptotes, envelopes, singular points, cusp, node, and conjugate points.

Mean value Theorems: Continuity and differentiability (Definitions only). Theorems on derivatives: Rolle's Theorem, Lagrange's mean value theorem and Cauchy mean value theorem. Taylor's and Maclaurin's series (problems only).

L'Hospital's rule: Statement of L' Hospital's rule and problems there on.

02hrs/week=32hrs

Integral calculus: Recapitulation of Algebraic rational and irrational functions and rational functions involving trigonometric functions and definite integrals. Reduction Formulae for $\int \sin^n x$, $\int \cos^n x$, $\int \tan^n x$, $\int \cot^n x$, $\int \sec^n x$, $\int \operatorname{cosec}^n x$, $\int \sin^m x \cos^m x dx$ with definite limit. Differentiation under the integral sign by Leibnitz rule.

01hrs/week=16hrs

Reference Books:

1. Higher algebra - Bernard & Child, Arihant, ISBN: 9350943199/ 9789350943199.
 2. Topics in Algebra - I N Herstein, Wiley Eastern Ltd., New Delhi.
 3. Modern Algebra - Sharma and Vasishta, Krishna Prakashan Mandir, Meerut, U.P.
 4. Analytical Solid Geometry - Shanti Narayan, New Delhi: S. Chand and Co. Pvt. Ltd., 2004
 5. Textbook of BSc Mathematics - Chakravarthy L.N, Vol 1, ISBN: 1234567176244, Chethana Book House
 6. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi.
 7. Integral Calculus - Shanti Narayan and P K Mittal, S. Chand and Co. Pvt. Ltd.,
 8. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill., 2008.
-



PRACTICAL - 2

Total: 42 Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs

(3 hours/ week per batch)

Softwares used: 1. Maxima

2. Scilab

LIST OF PROGRAMMES

1. Program to construct Cayley table and test abelian for given finite set using SCILAB.
 2. Program to test abelian group properties for given finite set using SCILAB
 3. Program to find all possible cosets of the given finite group using SCILAB
 4. Program to find all generators and corresponding all possible subgroups for the given cyclic group using SCILAB
 5. Programs to verify Lagrange's theorem for given finite group.
 6. Program to verify the Euler's theorem for given finite group using SCILAB.
 7. Programs for finding limits by comparing left and right limits using MAXIMA
 8. Programs for testing continuity of the function at $x = a$ and x in $[a, b]$ using MAXIMA
 9. Programs for testing differentiability of the function at $x = a$ and x in (a, b) using MAXIMA
 10. Programs to verify Rolle's theorem for given function using MAXIMA
 11. Programs to verify Lagrange's mean value theorem for given function using MAXIMA
 12. Programs to verify Cauchy's Mean value theorem using MAXIMA
 13. Programs to verify Taylor's Mean value theorem using MAXIMA
 14. Programs to construct series using Maclaurin's series
 15. Programs to find limit of the function using L'Hospital's rule.
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III SEMESTER

Paper - BSM 3: Algebra - III and Differential Equations - I

Total: 78 Hrs

Group Theory: Normal Subgroups, definition, examples and standard theorems on normal subgroups. Quotient groups, Homomorphism, isomorphism and fundamental theorem of homomorphism of groups.

02hrs/week=30hrs

Ordinary Differential Equation: Definition of an ordinary differential equation, its order and degree. Classification of solutions. Solution of first degree and first order equations.

- (1) Variable separable
- (2) Homogeneous and reducible to homogeneous form.
- (3) Linear and Bernoulli's form
- (4) Exact equations and reducible to exact form with standard I.F. Necessary and sufficient condition for the equation to be exact.



Equations of first order and higher degree. Solvable for p, Solvable for x (singular solutions), Solvable for y (singular solutions) and Clairaut's equation. Orthogonal trajectories. Second and higher order linear differential equations with constant co-efficient, complementary functions, Particular integral, standard types, Cauchy-Euler differential equations. Simultaneous differential equations with constant co-efficient (two variables).

03hrs/week=48hrs

Reference Books:

1. Higher algebra - Bernard & Child, Arihant, ISBN: 9350943199/ 9789350943199.
2. Topics in Algebra - I N Herstein, Wiley Eastern Ltd., New Delhi.
3. Modern Algebra - Sharma and Vashishta, Krishna Prakashan Mandir, Meerut, U.P.
4. Textbook of BSc Mathematics - Chakravarthy L.N, Vol 2, ISBN:1234567176245, Chethana Book House.
5. Ordinary and Partial Differential Equations - M D Raisinghania, S. Chand and Co. Pvt. Ltd.
6. Schaum's outline of theory and problems of Differential Equations - Frank Ayres, McGraw-Hill Publishing Co.
7. Differential Equations and Its Applications - S Narayanan and T K Manicavachagom Pillay, S V Publishers Private Ltd.
8. Differential equation with Applications and Historical Notes - G F Simmons, 2nded. McGraw-Hill Publishing Company.

PRACTICAL - 3

Total: 42 Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs

(3 hours/ week per batch)

Softwares used: 1. Maxima

2. Scilab

LIST OF PROGRAMMES

1. Program to test normality of a given subgroup and a group using SCILAB.
2. Program to test homomorphism of a give function from $G \rightarrow G'$ using SCILAB.
3. Program to test isomorphism of a given function from $G \rightarrow G'$ using SCILAB.
4. Program to find the solution of given differential equation using Maxima and plotting the Solution-I. (1st order 1st degree non-linear)
5. Program to find the solution of given differential equation using Maxima and plotting the solution-II. (1st order 1st degree linear)
6. Program to find the solution of given differential equation using Maxima and plotting the solution-III. (1st order but not of 1st degree)
7. Program to find complementary function and particular integral of given differential equation with constant coefficients.
8. Program to find solution of given simultaneous differential equations with constant coefficients.
9. Programs for plotting curves in 2D Plane which are in Cartesian form.
10. Programs for plotting curves in 2D Plane which are in polar form.
11. Programs for plotting curves in 2D Plane which are in Parametric form.
12. Programs for plotting curves in 3D space using MAXIMA/SCILAB.



IV SEMESTER

Paper - BSM 4: Differential Equations - II and Analysis

Total: 78 Hrs

Ordinary Linear Differential Equations: Solution of ordinary second order linear differential equation with variable coefficients by the methods:

1. When a part of complementary function is given,
2. Changing the independent variable,
3. Changing the dependent variable,
4. When a first integral is given (exact equation),
5. Variation of parameters

02hrs/week=30hrs

Sequence of Real Numbers: Definition of a sequence, limits of a sequence, algebra of limit of a Sequence-Convergent, Divergent and Oscillatory sequence problems there on. Bounded sequence; every convergent sequence is bounded-converse is not true, Monotonic Sequence and Their properties, Cauchy's sequence.

Infinite Series: Definition of convergent, divergent and oscillatory of series - standard properties and results, Geometric and Hyper geometric series. Cauchy's criterion (statement only). Tests of convergence of series - comparison tests - D'Alemberts Ratio test - Raabe's test - Cauchy's root test. The Integral test - Absolute Convergence and Leibnitz's test for alternating series.

03hrs/week=48hrs

Reference Books:

1. Ordinary and Partial Differential Equations - M D Raisinghania, S. Chand and Co. Pvt. Ltd.
 2. Schaum's outline of theory and problems of Differential Equations - Frank Ayres, McGraw-Hill Publishing Co.
 3. Differential Equations and Its Applications - S Narayanan and T K Manicavachagom Pillay, S V Publishers Private Ltd.
 4. Differential equation with Applications and Historical Notes - G F Simmons, 2nded.: McGraw-Hill Publishing Company.
 5. Elements of Real Analysis - Shanti Narayan, S. Chand & Company, New Delhi.
 6. Mathematical Analysis - S. C. Malik, Savita Arora, New Age Science Ltd.
 7. Principles of Mathematical Analysis - Walter Rudin, McGraw-Hill Publishing Company.
-

PRACTICAL - 4

Total: 42 Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(3 hours/ week per batch)
Softwares used: 1. Maxima

**2. Scilab****LIST OF PROGRAMMES**

1. Program to find the solution of Differential Equations by finding complimentary functions
 2. Program to find the solution of Differential Equations by changing independent variable.
 3. Program to find the solution of Differential Equations by changing dependent variable.
 4. Program to test for exactness and solve the Differential Equations of second order.
 5. Program to illustrate convergence, divergence or oscillatory of the given sequence using SCILAB/MAXIMA.
 6. Program to illustrate convergence, divergence or oscillatory of the given series using SCILAB/MAXIMA.
 7. Using Cauchy's criterion to determine convergence of the given sequence.
 8. Using Cauchy's criterion to determine convergence of the given series.
 9. Program to test the convergence of the series using Leibnitz's theorem.
-

V SEMESTER**Paper - BSM 5: Differential Equations– III, Fourier series and Algebra-IV****Total: 60 Hrs**

Total and Simultaneous Differential Equations: Necessary condition for the equation $P dx + Q dy + R dz = 0$ to be integrable-problems there on. Solutions of equation of the $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$.

Partial Differential Equations: Formation of partial differential equation –Lagrange's linear equation: $Pp + Qq = R$. Four standard types of first order partial differential equations, Charpit's methods.

Fourier Series: Periodic functions and properties-Fourier series of functions with period 2π and period $2L$. Half range cosine and sine series.

02hr/week=30hrs

Rings, Integral Domains and Fields: Rings- Definition, Types of rings. Examples properties of rings - Rings of Integers Modulo-n - Integral domains - Fields. Examples - subrings - Ideals -Principal ideals, Maximal ideal commutative rings, examples and standard properties- Homomorphism and Isomorphism - properties of homomorphism of rings. Quotient rings.

02hrs/week=30hrs**Reference Books:**

1. Ordinary and Partial Differential Equations - M D Raisinghania, S. Chand and Co. Pvt. Ltd.
2. Schaum's outline of theory and problems of Differential Equations - Frank Ayres, McGraw-Hill Publishing Co.
3. Differential Equations and Its Applications - S Narayanan and T K Manicavachagom Pillay, S V Publishers Private Ltd.



4. Differential equation with Applications and Historical Notes - G F Simmons, 2nded.: McGraw-Hill Publishing Company.
5. Topics in Algebra - I N Herstein, Wiley Eastern Ltd., New Delhi.
6. Modern Algebra - Sharma and Vashishta, Krishna Prakashan Mandir, Meerut, U.P.
7. Textbook of BSc Mathematics - Chakravarthy L.N., Vol 2, ISBN:1234567176245, Chethana Book House.

PRACTICAL - 5

Total: 30Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs

(2 hours/ week per batch)

Softwares used: 1. Maxima

2. Scilab

LIST OF PROGRAMMES

1. Program to find the solution of the given total differential equation.
2. Program to find the solution of the given simultaneous differential equations.
3. Program to find the solution of the given partial differential equation.
4. Program to find whether given finite set is ring or not?
5. Program to show whether given subset of a finite ring is a subring or Not?
6. Program to find whether given subset of a finite ring is an ideal or not?
7. Program to find whether given function is a homomorphism or not?
8. Program to find whether given function is an isomorphism or not?
9. To plot periodic functions with period 2π and $2L$
10. To find full range trigonometric Fourier series of some simple functions with period 2π and $2L$.
11. Plotting of functions in half-range and including their even and odd extensions.
12. To find the half-range sine and cosine series of simple functions.
13. To find the half-range sine and cosine series of simple functions.

V SEMESTER

Paper - BSM 6: Line and Multiple Integrals and Laplace Transforms

Total: 60 Hrs

Line and Multiple Integrals: Definition of line integral and basic properties, examples on evaluation of line integrals. Definition of double integrals, evaluation of double integrals (1) under given limits (2) In regions bounded by given curves - change of variables, surface area as double integrals. Definition of triple integrals and evaluation, change of variables, volume as a triple integral.

02hrs/week=30hrs

Laplace Transforms: Definition and basic properties - Laplace transforms of e^{kt} , $\cos kt$, $\sin kt$, t^n , $\cosh kt$ and $\sinh kt$ - Laplace transform of $e^{at} F(t)$, $t^n F(t)$, $F(t)/t$ - problems - Laplace transform of derivatives of functions - Laplace transforms of integrals of functions - Laplace



transforms of unit step functions - Inverse Laplace transforms - problems. Convolution theorem - Simple initial value problems - Solution of first and second order differential equations with constant coefficients by Laplace transform method.

02hrs/week=30hrs

Reference Books:

1. Integral Calculus - H.S. Dhama, New Age International Pvt. Ltd Publishers.
 2. Text Book of Multiple Integrals - A.K. Sharma, Discovery Publishing House, New Delhi.
 3. Differential and Integral Calculus, Vol. II - N. Piskunov, CBS Publishers & Distributors Pvt. Ltd.
 4. Mathematical Analysis - S. C. Malik, Savita Arora, New Age Science Ltd.
 5. Higher Engineering Mathematics - B.S. Grewal, Khanna publishers.
 6. Advanced Engineering Mathematics by Erwin Kreyszig, Wiley; Ninth edition, ISBN:8126531355
 7. Schaum's Outline of Laplace Transforms - Murray Spiegel, McGraw-Hill Education
 8. Laplace and Fourier Transforms - M. D. Raisinghania, New Delhi, India: S. Chand and Co. Ltd.
-

PRACTICAL - 6

Total: 30Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs

(2 hours/ week per batch)

Softwares used: 1. Maxima

2. Scilab

LIST OF PROGRAMMES

1. Evaluation of the line integral with constant limits.
 2. Evaluation of the double integral with constant limits.
 3. Evaluation of the triple integral with constant limits.
 4. Evaluation of the line integral with variable limits.
 5. Evaluation of the double integral and triple integral with variable limits.
 6. Evaluation of area of the surface as double integral.
 7. Evaluation of volume of the solid as a triple integral.
 8. Finding the Laplace transforms of some standard functions.
 9. Finding the inverse Laplace transform of simple functions.
 10. Program to Verify of Convolution Theorem.
 11. Program to find the solution of a differential equation using Laplace transform method.
-



VI SEMESTER

Paper - BSM 7: Vector Space and Numerical Analysis

Total: 60 Hrs

Vector Space: Vector spaces, examples, subspaces, criterion for a subset to be a subspace. Concepts of linear dependence and independence. Fundamental theorem of linear dependence. Basis and dimension, standard properties of linearly independent and dependent sets examples, illustrations, concepts and results.

Linear transformations, Matrix representation of linear maps. Rank and nullity of a linear transformation.

02hrs/week=30hrs

Numerical Analysis: Solution of algebraic and transcendental equations of one variable by Bisection, Regula-Falsi and Newton-Raphson methods.

Finite differences (Forward and Backward differences) Interpolation, Newton's forward and backward interpolation formulae. Divided Differences-Newton's divided difference formula. Lagrange's interpolation formulae.

Numerical differentiation using Newton's forward and backward interpolation formulae.

Numerical Integration-Trapezoidal rule, Simpson's one-third and three - eight rule, Weddle's rule. (without proof).

Numerical solution of ordinary differential equations of first order and first degree-Picard's method, modified Euler's method, Runge-kutta method of fourth-order (No derivations of formulae).

02hrs/week=30hrs

Reference Books:

1. Herstein: Topics in Algebra, Wiley Eastern Ltd., New Delhi.
 2. Modern Algebra - Sharma and Vashishta, Krishna Prakashan Mandir, Meerut, U.P.
 3. Schaum's outline of Linear Algebra - Seymour Lipschutz, McGraw Hill Education.
 4. The Linear Algebra a Beginning Graduate Student Ought to Know - Golan, Jonathan S, Springer International Publishing.
 5. Introductory Methods of Numerical Analysis - S.S. Sastry, Prentice Hall India Learning Private Limited.
 6. Numerical Methods: For Scientific and Engineering Computation - M.K. Jain, S.R.K. Iyengar, R.K. Jain, NEW AGE; 6th edition
 7. Numerical Analysis - B. D Gupta, Stosius Inc/Advent Books Division.
 8. Finite Difference and Numerical Analysis - H. C Saxena, S. Chand Publishing.
 9. Numerical Methods for Scientists and Engineers - B. S. Grewal, Khanna Publishers.
 10. Advanced Engineering Mathematics - E. Kreyszig.
-



PRACTICAL - 7

Total: 30Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs

(2 hours/ week per batch)

Softwares used: 1. Maxima

2. Scilab

LIST OF PROGRAMMES

1. Program to verify given set is vector space or not?
 2. Program to find whether given set is L.I or L.D.
 3. Program to verify whether given function is basis or not?
 4. Program to verify given mapping is Linear transformation or not?
 5. Program to find matrix of a given linear transformation.
 6. Program to find the rank and nullity of a linear transformation?
 7. Scilab/Maxima programs on Interpolations with equal intervals.
 8. Scilab/Maxima programs on Interpolations with unequal intervals.
 9. Scilab/Maxima programs to evaluate integrals using trapezoidal, Simpson's $1/3^{\text{rd}}$ rule and Simpson's $3/8^{\text{th}}$ rule.
 10. Solving ordinary differential equation by modified Euler's method.
 11. Solving ordinary differential equation by Runge-Kutta method of 4^{th} order.
-

VI SEMESTER

Paper - BSM 8: Riemann Integration, Vector Calculus and Complex Analysis

Total: 60 Hrs

Riemann Integrations: Upper and Lower sums, Refinement of partitions, upper and lower integrals, integrability, Criterion for integrability, continuous and monotonic functions are Riemann integrable, integral as the limit of a sum, integrability of the sum and product of integrable functions, integrability of the modulus of an integrable function, the fundamental theorem of calculus.

Vector Calculus: Scalar field – gradient of a scalar field, geometrical meaning – directional derivative – Maximum directional derivative – Angle between two surfaces - vector field–divergence and curl of a vector field – solenoidal and irrotational fields – scalar and vector potentials – Laplacian of a scalar field – vector identities. Standard properties, Harmonic functions, Problems.

2hrs/week=30hrs

Complex Analysis: Complex numbers, the complex plane - conjugate and modulus of a complex number - the modulus-argument form - geometric representation - Equation to circle and line in the complex form.

Functions of a complex variable, limit, continuity and differentiability of function- Analytic function - Cauchy-Riemann equations in Cartesian form. Sufficient conditions for analytic (in Cartesian form). Real and imaginary parts of analytic functions are harmonic, construction of analytic function given real or imaginary parts.



02hrs/week=30hrs

Reference Books:

1. Mathematical Analysis - S. C. Malik, Savita Arora, New Age Science Ltd.
 2. Principles of Mathematical Analysis - Walter Rudin, McGraw-Hill Publishing Company.
 3. Real and Complex Analysis - Walter Rudin, McGraw-Hill Higher Education.
 4. Elements of Real Analysis - Shanti Narayan, S. Chand & Company, New Delhi.
 5. Complex Variables and Applications - James Brown, Ruel Churchill, McGraw-Hill.
 6. Foundations of Complex Analysis - S. Ponnusamy, Narosa book distributors Pvt. Ltd.-New Delhi
 7. Schaum's Outline of Complex Variables - Murray Spiegel, John Schiller, Seymour Lipschutz, McGraw-Hill Education.
 8. Complex Analysis - Lars Ahlfors, McGraw-Hill Education.
 9. Vector Calculus - Paul C. Matthews, Springer-Verlag London.
 10. Golden Vector Calculus, R. Gupta, Laxmi Publications
 11. A Textbook of Engineering Mathematics - N. P. Bali, N. Ch. Narayana Iyengar, Laxmi Publications.
 12. Textbook of Vector Calculus - Shanti Narayan, S. Chand.
-

PRACTICALS - 8**Total: 30Hrs****Practicals with Free and Open Source Software (FOSS) tools for computer programs****(2 hours/ week per batch)****Softwares used: 1. Maxima****2. Scilab****LIST OF PROGRAMMES**

1. Programmes to find lower and upper Riemann sum.
 2. Programmes to find lower and upper Riemann integration.
 3. To demonstrate the physical interpretation of gradient, divergence and curl.
 4. Writing gradient, divergence, curl and Laplacian in cylindrical coordinates.
 5. Writing gradient, divergence, curl and Laplacian in spherical coordinates.
 6. Using cyclic notations to derive different vector identities.
 7. Using cyclic notations to derive some more vector identities.
 8. Programs to verify given functions satisfy Cauchy-Riemann equations both in Cartesian and polar form.
 9. Implementation of Milne-Thomson method in constructing analytic functions (simple examples).
 10. Illustrating orthogonality of the surfaces obtained from the real and imaginary parts of an analytic function.
 11. Program to verify given function is harmonic or not.
 12. Program to verify real part of an analytic function being harmonic.
 13. Program to verify imaginary part of an analytic function being harmonic.
-



PATTERN OF THE QUESTION PAPER

FROM 1st TO 6th SEMESTER

Time:3 Hours

Max.Marks:70

I	Answer any FIVE of the following (8 questions are given)	$5 \times 2 = 10$ Marks
II	Answer any THREE of the following (05 questions are given)	$3 \times 5 = 15$ Marks
III	Answer any THREE of the following (05 questions are given)	$3 \times 5 = 15$ Marks
IV	Answer any THREE of the following (05 questions are given)	$3 \times 5 = 15$ Marks
V	Answer any THREE of the following (05 questions are given)	$3 \times 5 = 15$ Marks

PATTERN OF THE QUESTION PAPER

PAPER -BSM 1

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

- 1. } Matrices
- 2. }
- 3. }
- 4. } Polar Co-ordinates
- 5. }
- 6. } Successive Differentiation
- 7. } Function of two and three variables
- 8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Matrices
- 4. }
- 5. }

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. }
- 2. } Matrices
- 3. }
- 4. } Polar Co-ordinates
- 5. }

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. }
- 2. } Polar Co-ordinates
- 3. }
- 4. }
- 5. } Successive Differentiation



V. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. } Successive Differentiation
- 2. }
- 3. }
- 4. } Function of two and three variables
- 5. }

PAPER - BSM 2

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following:

Marks: $5 \times 2 = 10$

- 1. } Groups
- 2. }
- 3. } Theory of plane Curves
- 4. } Mean value theorems
- 5. }
- 6. } L'Hospital's rule
- 7. } Integral Calculus
- 8. }

II. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Groups
- 4. }
- 5. }

III. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. } Theory of plane Curves
- 2. }
- 3. }
- 4. } Mean value Theorems
- 5. }

IV. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. } Mean value Theorems
- 2. }
- 3. }
- 4. } L'Hospital's rule
- 5. }

V. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Integral Calculus
- 4. }
- 5. }



PAPER - BSM 3

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

- 1. } Group Theory
- 2. }
- 3. }

- 4. } Ordinary Differential Equation
- 5. }
- 6. }
- 7. }
- 8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Group Theory
- 2. }
- 3. }
- 4. }
- 5. }

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Ordinary Differential Equation (up to Exact)
- 2. }
- 3. }
- 4. }
- 5. }

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Ordinary Differential Equation (after Exact up to orthogonal trajectories)
- 2. }
- 3. }
- 4. }
- 5. }

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Ordinary Differential Equation (Higher order and simultaneous equations)
- 2. }
- 3. }
- 4. }
- 5. }

PAPER - BSM 4

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

- 1. } Ordinary Linear Differential Equations
- 2. }
- 3. }
- 4. }

- 5. } Sequence and Series
- 6. }
- 7. }
- 8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$



- 1. } Ordinary Linear Differential Equations
- 2. }
- 3. }
- 4. }
- 5. }

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Ordinary Linear Differential Equations
- 2. }
- 3. }
- 4. } Sequence of Real Numbers
- 5. }

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Sequence of Real Numbers
- 2. }
- 3. }
- 4. } Infinite Series
- 5. }

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Infinite Series
- 2. }
- 3. }
- 4. } The Integral test and Leibnitz's test
- 5. }

PAPER - BSM 5

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

- 1. } Total and Simultaneous Differential Equations
- 2. }
- 3. } Partial Differential Equations
- 4. }
- 5. } FourierSeries
- 6. }
- 7. } Rings, Integral Domains and Fields
- 8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Total and Simultaneous Differential Equations
- 2. }
- 3. }
- 4. }
- 5. } Partial Differential Equations

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. } Partial Differential Equations
- 2. }
- 3. }
- 4. } FourierSeries
- 5. }

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$



- 1. } Fourier Series
- 2. }
- 3. }
- 4. } Rings (up to Subrings)
- 5. }

V. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Rings (From Ideals to till end)
- 4. }
- 5. }

PAPER - BSM 6

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following:

Marks: $5 \times 2 = 10$

- 1. }
- 2. } Line and Multiple Integrals
- 3. }
- 4. }
- 5. }
- 6. } Laplace Transforms
- 7. }
- 8. }

II. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. } Line Integrals
- 2. }
- 3. }
- 4. } Double Integrals
- 5. }

III. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. } Double Integrals
- 2. }
- 3. }
- 4. } Triple Integrals
- 5. }

IV. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Laplace Transforms
- 4. }
- 5. }

V. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Laplace Transforms
- 4. }
- 5. }



PAPER - BSM 7

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

- 1. } Vector Space
- 2. }
- 3. }
- 4. }
- 5. }
- 6. } Numerical Analysis
- 7. }
- 8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Vector Space (up to basis and dimensions)
- 4. }
- 5. }

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Vector Space (Linear transformation till end)
- 4. }
- 5. }

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Numerical Analysis (up to numerical differentiation)
- 4. }
- 5. }

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

- 1. }
- 2. }
- 3. } Numerical Analysis (numerical integration till end)
- 4. }
- 5. }

PAPER - BSM 8

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

- 1. } Riemann Integrations
- 2. }
- 3. } Vector Calculus
- 4. }
- 5. }
- 6. } Complex Analysis
- 7. }
- 8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$



- 1. } Riemann Integrations
- 2. }
- 3. }
- 4. }
- 5. }

III. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. } Vector Calculus
- 2. }
- 3. }
- 4. }
- 5. }

IV. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

- 1. } Complex Analysis (up to analytic functions)
- 2. }
- 3. }
- 4. }
- 5. }

V. Answer any **THREE** of the following:

Marks: $3 \times 5 = 15$

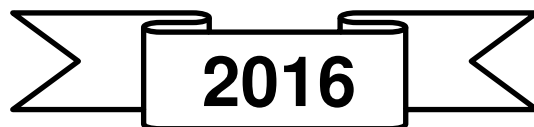
- 1. } Complex Analysis (from analytic functions till
- 2. }
- 3. }
- 4. }
- 5. }

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**JNANA SAHYADRI, SHANKARAGHATTA,
SHIVAMOGGA DIST., INDIA, 577 451.**

**Chemistry Syllabus for B.Sc. Course- 2016
(SEMESTER SCHEME)
(w.e.f. June - 2016)**



KUVEMPU UNIVERSITY
Chemistry Syllabus for B.Sc. Course – 2016
(SEMESTER SCHEME)
(w.e.f. June - 2016)

PREFACE

Science and Science education plays an important role in the development of any modern society. An effective science education can be imparted at the undergraduate level only by revamping the present curriculum and teaching to make it effective and meaningful. For this, the curriculum should be composed, giving emphasis to various aspects such as the creativity of students, awareness of basic knowledge of science, especially chemistry because chemistry is a border science to biology, physics and engineering and many other branches of science. Hence the syllabus of undergraduate courses in chemistry is prepared to give sound knowledge, understanding of chemistry. The goal of the syllabus is to make the study of chemistry stimulating, relevant and interesting. The syllabus is prepared with a view to equipping the students to contribute their knowledge and skills to academic and industrial environments and also will expose students to various fields in chemistry and in the related disciplines. The emphasis is given in the syllabus for training the students in laboratory skills and instrumentation.

This new syllabus has been prepared in a participatory manner, after discussions with a number of faculty members in the subject and also after evaluating the existing syllabi of B.Sc., the new syllabi of XI and XII standards and U.G.C. model curriculum and the syllabi of other Universities. The units of the syllabus are well defined and the scope of each is given in detail. The number of contact hours required for each unit is also given. A list of reference books is provided at the end of each unit.

OBJECTIVES

- To expose students into various fields in chemistry and to understand basic facts and concepts in Chemistry, to develop interest in the study of chemistry, and advanced aspects of related disciplines.
- To acquire the knowledge of terms, facts, concepts, techniques and principles of the subject and to develop the ability to apply skills in the proper handling of apparatus and chemicals.
- To develop problem solving skills.
- To be familiarized with the emerging areas of Chemistry their applications in various areas of Chemical sciences and empower students to meet the challenges of tomorrow.

Chemistry Syllabus for B.Sc. Course – 2016 (SEMESTER SCHEME)
(w.e.f. June - 2016)

Pattern and Scheme of Examination under Semester Scheme
approved by UG-BOS in Chemistry held on 25-11-2015.

: SYLLABUS PATTERN :

<p><u>First Semester:</u> <u>Paper-I; CHEMISTRY - I (60 hours)</u> <u>(15 hours/unit, 04 hours/week)</u> <u>Theory:</u> Unit-I: Analytical Chemistry Unit-II: Inorganic Chemistry Unit-III: Organic Chemistry Unit-IV: Physical Chemistry <u>Practical: Paper-I (03 hours/week)</u></p>	<p><u>Second Semester:</u> <u>Paper-II; CHEMISTRY - II (60 hours)</u> <u>(15 hours/unit, 04 hours/week)</u> <u>Theory:</u> Unit-I: Analytical Chemistry Unit-II: Inorganic Chemistry Unit-III: Organic Chemistry Unit-IV: Physical Chemistry <u>Practical: Paper-II (03 hours/week)</u></p>
<p><u>Third Semester:</u> <u>Paper-III; CHEMISTRY - III (60 hours)</u> <u>(15 hours/unit, 04 hours/week)</u> <u>Theory:</u> Unit-I: Analytical Chemistry Unit-II: Inorganic Chemistry Unit-III: Organic Chemistry Unit-IV: Physical Chemistry <u>Practical: Paper-III (03 hours/week)</u></p>	<p><u>Fourth Semester:</u> <u>Paper-IV; CHEMISTRY - IV (60 hours)</u> <u>(15 hours/unit, 04 hours/week)</u> <u>Theory:</u> Unit-I: Analytical Chemistry Unit-II: Inorganic Chemistry Unit-III: Organic Chemistry Unit-IV: Physical Chemistry <u>Practical: Paper-IV (03 hours/week)</u></p>
<p><u>Fifth Semester:</u> <u>Paper-V; CHEMISTRY - V (45 hours)</u> <u>(15 hours/unit, 03 hours/week)</u> <u>Theory:</u> Unit-I: Analytical Chemistry Unit-II: Inorganic Chemistry Unit-III: Organic Chemistry <u>Practical: Paper-V (03 hours/week)</u></p>	<p><u>Fifth Semester:</u> <u>Paper-VI; CHEMISTRY - VI (45 hours)</u> <u>(15 hours/unit, 03 hours/week)</u> <u>Theory:</u> Unit-I: Physical Chemistry Unit-II: Analytical Chemistry Unit-III: Inorganic Chemistry <u>Practical: Paper-VI (03 hours/week)</u></p>
<p><u>Sixth Semester:</u> <u>Paper-VII; CHEMISTRY - VII (45 hours)</u> <u>(15 hours/unit, 03 hours/week)</u> <u>Theory:</u> Unit-I: Organic Chemistry Unit-II: Physical Chemistry Unit-III: Analytical Chemistry <u>Practical: Paper-VII (03 hours/week)</u></p>	<p><u>Sixth Semester:</u> <u>Paper-VIII; CHEMISTRY - VIII (45 hours)</u> <u>Theory:</u> Unit-I: Inorganic Chemistry Unit-II: Organic Chemistry Unit-III: Physical Chemistry <u>Practical: Paper-VIII (03 hours/week)</u></p>

Chemistry Syllabus for B.Sc. Course – 2016 (SEMESTER SCHEME)
(w.e.f. June - 2016)
Examination Pattern

: EXAMINATION PATTERN :											
THEORY						PRACTICALS					Grand Total
Semester	Paper	Duration	Max. Marks	IA	Total	Paper	Duration	Max. Marks	IA	Total	
I	<u>Paper-I</u>	3 hours	50	10	60	<u>Paper-I</u>	3 hours	40	-	40	100
II	<u>Paper-II</u>	3 hours	50	10	60	<u>Paper-II</u>	3 hours	40	-	40	100
III	<u>Paper-III</u>	3 hours	50	10	60	<u>Paper-III</u>	3 hours	40	-	40	100
IV	<u>Paper-IV</u>	3 hours	50	10	60	<u>Paper-IV</u>	3 hours	40	-	40	100
V	<u>Paper-V</u>	3 hours	50	10	60	<u>Paper-V</u>	3 hours	40	-	40	200
	<u>Paper-VI</u>	3 hours	50	10	60	<u>Paper-VI</u>	3 hours	40	-	40	
VI	<u>Paper-VII</u>	3 hours	50	10	60	<u>Paper-VII</u>	3 hours	40	-	40	200
	<u>Paper-VIII</u>	3 hours	50	10	60	<u>Paper-VIII</u>	3 hours	40	-	40	
Theory (Final exam)			Internals			Practical			Total Marks:		
400			80			320			I to VI SEMESTER		
			(For each paper, two IA's (Tests) per semester, each carrying 20 marks and averaged to 10 marks)						800		

Question paper pattern for FIRST to FOURTH Semesters

Instructions:

- a) The question paper contains three parts, Part-A, B, C and D.
- b) Part-A (1 mark questions), Part-B (2 marks questions), Part-C (4 marks questions) and Part-D (8 marks questions).
- c) Examination duration = 3 hours; Maximum marks = 50.

PART-A

Answer the following in a word, phrase or a sentence. 8×1=8

- Q. 1. a
b
c
d
e
f
g
h

PART-B

Answer any FIVE of the following questions. 5×2=10

- Q. 2. a
b
c
d
e
f
g
h

PART-C

Answer Any FOUR of the following questions. 4×4=16

- Q. 3.
Q. 4.
Q. 5.
Q. 6.
Q. 7.
Q. 8.

PART-D

Answer Any TWO of the following questions.

2×8=16

Q. 09.

Q. 10.

Q. 11.

Q. 12.

NOTE: Question paper setting pattern (Instructions to question paper setters)

Part-A & B: Question no. 1 and 2: TWO questions shall be selected from each Unit.

Part-C: Minimum ONE question shall be selected from each Unit. Each Question carries 4 Marks.

Part-D: One question shall be selected from each Unit. Each question carries 8 Marks. Subdivisions, if required, should not exceed a) & b) with a marks distribution of 3+5 or 4+4.

Question paper pattern for FIFTH and SIXTH Semesters

Instructions:

- a) The question paper contains three parts, Part-A, B, C and D.
- b) Part-A (1 mark questions), Part-B (2 marks questions), Part-C (4 marks questions) and Part-D (8 marks questions).
- c) Examination duration = 3 hours; Maximum marks = 50.

PART-A

Answer the following in a word, phrase or a sentence. 8×1=8

- R. 1. a
b
c
d
e
f
g
h

PART-B

Answer any FIVE of the following questions. 5×2=10

- Q. 2. a
b
c
d
e
f
g
h

PART-C

Answer Any FOUR of the following questions. 4×4=16

- Q. 3.
Q. 4.
Q. 5.
Q. 6.
Q. 7.
Q. 8.

PART-D

Answer Any TWO of the following questions.

2×8=16

Q. 09.

Q. 10.

Q. 11.

Q. 12.

NOTE: Question paper setting pattern (Instructions to question paper setters)

Part-A & B: Question no. 1 and 2: Minimum TWO questions shall be selected from each Unit.

Part-C: Minimum ONE question shall be selected from each Unit. Each Question carries 4 Marks.

Part-D: Minimum ONE question shall be selected from each Unit. Each question carries 8 Marks. Subdivisions, if required, should not exceed a) & b) with a marks distribution of 3+5 or 4+4.

KUVEMPU UNIVERSITY

Chemistry Syllabus for B.Sc. Course – 2016 (SEMESTER SCHEME)

(w.e.f. June - 2016)

FIRST SEMESTER

PAPER-I: CHEMISTRY - I

Total Hours: 60

UNIT - I: ANALYTICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Theory of Titrimetric Analysis

12 hours (16 marks weightage)

Introduction, principles of titrimetric analysis, requirement of titrimetric analysis, definition of equivalent weight, acidity, basicity, primary and secondary standards. Requirement of a primary standard solution, units of standard solutions (normality, molarity, molality, mole fraction, ppm). Classification of titrimetric analysis-Acid base titration: Types-explanation with titration curves, indicators used in acid base titrations, Ostwald's theory of acid-base indicator taking phenolphthalein and methyl orange as examples, choice of acid-base indicator.

Redox titration- theory of redox indicators with reference to diphenylamine, roll of o-phosphoric acid in redox titration,

Complexometric titrations-Definitions, metal indicators, principles and theory, types of EDTA titrations, estimation of Zn^{2+} using EDTA.

Iodometric titrations-principle, applications-estimation of copper, estimation of available chlorine in bleaching powder.

Chapter-2: Introduction to qualitative analysis of inorganic salts

3 hours (04 marks weightage)

Common ion effect, solubility products, principle. Application of common ion effect and solubility products, principle in qualitative analysis.

References:

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch VIII Edition, 2005, Saunders College Publishing, New York.
2. Analytical Chemistry, G.D. Christian, V Ed., 2001 John Wiley & Sons, Inc, India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, VI Edition, 1993, Prentice Hall, Inc. New Delhi.
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, VI Edition, Third Indian Reprint. 2003. Pearson Education Pvt. Ltd., New Delhi.
5. Analytical Chemistry Principles, John H. Kennedy, II Edition, Saunders College Publishing, California, 1990.

Chapter-1: Atomic structure**9 hours (12 marks weightage)**

Wave nature of electron-de Broglie equation. Heisenberg uncertainty principle. Schrodinger wave equation (no derivation). Significance of Ψ and Ψ^2 –atomic orbitals, Eigen values and eigen function, radial angular wave function and probability distribution curve for 1s,2s,2p,3s and 3p orbitals.

Quantum numbers and their significance. Shapes of s, p and d-orbitals and their nodal planes. Assigning of quantum number to a given electron in an atom (I and II period elements) in the periodic table. Energy level diagrams of polyelectron system, shielding or screening effect of inner shell electron on valence electron, factors affecting the magnitude of screening effect, effective nuclear charge, applications of effective nuclear charge, screening effect based on Slater's rule- problems to be solved.

Chapter-2: Periodic properties**6 hours (8 marks weightage)**

Ionization energy: Explanation, factors affecting the magnitude of ionization energy, variation of ionization energy in a group and period. Successive ionization energies, effect of ionic size and electronic configuration (III period), applications.

Electron affinity: Definition, factors affecting the magnitude of electron affinity, variation of electron affinity in a group and period, explanation for the observed trend, applications.

Electronegativity: Definition, explanation, factors influencing electronegativity variation in a group and period, explanation for the observed trend, Anomalies to be accounted, Pauling scale and Mulliken's scale of electronegativity (Problems to be solved), applications.

References:

1. Principles of Inorganic Chemistry (UGC Syllabus), B.R. Puri, L.R. Sharma, K.C. Kalia, Milestone Publishers, New Delhi, India, 2008.
2. Advanced Inorganic Chemistry by Gurudeep Raj and Chatwal Anand.
3. Modern Inorganic Chemistry by R.D. Madan.
4. Advanced Inorganic Chemistry by Sathyaprakash.
5. J. E. Huheey, E. A. Keiter and R. L. Keiter, Inorganic Chemistry: Principles of Structure and Reactivity, IV Edition, Pearson Education, India, 2006.
6. F. A. Cotton, G. Wilkinson, C. M. Murillo and M. Bochmann, Advanced Inorganic Chemistry, VI Edn, John Wiley and Sons, Inc., New York, 1999.

UNIT - III: ORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Structure and bonding in organic molecules. 4 hours (5 marks weightage)

Nature of chemical bonding, covalent, ionic, hydrogen bonding with examples. Orbit and orbital, shapes of s and p orbital's. Concept of hybridization in carbon atom. Shape, structure, bond length, bond angle, bond energies of methane and ethane, ethene and ethyne.

Chapter-2: Basic concepts in mechanism of organic reactions

5 hours (7 marks weightage)

Types of reactions: addition, elimination, substitution, rearrangement reactions with suitable examples. Types of reagents: electrophilic reagents, nucleophilic reagents. Electronic effects: inductive, electromeric, mesomeric, hyper conjugation. Resonance-rules for writing resonance. Arrow notation: curved arrow, single headed, double headed, and half headed arrow. Cleavage of bond- homolytic and heterolytic with example.

Reactive intermediates- formation, structure and stability of free radicals, carbocation, carbanion, carbene, nitrene with examples.

Chapter-3: Alkanes.

3 hours (4 marks weightage)

Nomenclature. Methods of preparation- Kolbe's synthesis, Corey-House synthesis, from Grignard reagents. Mechanism of chlorination of ethane.

Chapter-4: Cycloalkanes.

3 hours (4 marks weightage)

Nomenclature. Methods of preparation- Freund's method, Wisticeus method.

References:

1. Organic Chemistry, Bahl and Arun Bahl, S. Chand and Sons, New Delhi, 2005.
2. Organic Chemistry, R. T. Morrison and R. N. Boyd, VI Edition, Printice-Hall of India Limited, New Delhi, 1992.
3. Organic Chemistry, B. Y. Paula, III Edition, Pearson Education, Inc.(Singapore), New Delhi, reprint, 2002.
4. Textbook of Organic Chemistry, P S Kalsi, Mac Millan, 2000.

(Note: Numerical problems must be solved wherever necessary)

Chapter - 1: Mathematical Concepts in Chemistry (A brief review)

3 hours (3 marks weightage)

Logarithmic relations, Definitions: Some important relations like $\log (m \times n)$, $\log (m/n)$, \log (base changing), application in the calculation of pH . Differentiation of functions like e^x , x^n , $\sin x$, $\log x$; maxima and minima. partial differentiation. Exact & in-exact differentials. Examples from internal energy, enthalpy, Partial differentiation – explanation using $H = U + PV$ and $G = H - TS$., Integration – meaning and integrals of some important functions like x , dx , $1/x$, x^2 , x^n , $1/x$, $1/x^2$, $1/x^3$, \sqrt{x} , nx^2 , e^x , $\sin x$, $\cos x$, simple problems from I and II order kinetics. A brief introduction to Factorials and Probability, examples from atomic orbitals, wave functions and entropy.

Chapter-2: Gaseous State and Critical Phenomenon

5 hours (8 marks weightage)

Postulates of kinetic theory of gases, Qualitative discussion of the Maxwell's distribution of molecular velocities, collision number, mean free path and collision diameter. Calculation of root mean square velocity, average velocity and most probable velocity and relationship between them.

Critical Phenomenon: Critical temperature, Critical pressure, critical volume. PV isotherms of carbon dioxide, Derivation of van der Waal's equation of State, relationship between critical constants and van der Waal's constants. Reduced temperature, pressure and volume. Law of corresponding states.

Chapter-3: Liquid State and Solutions

7 hours (9 marks weightage)

Liquid State: Intermolecular forces (qualitative description). Structural differences between solids, liquids and gases.

Liquid Mixture: Review of Raoult's law, ideal and non-ideal solutions. Completely miscible liquids-Critical solution temperature, Effect of addition of salt on CST of phenol-water system. Immiscible liquids-Steam distillation and its applications.

Dilute solutions:- Review of colligative properties; Lowering of vapour pressure, elevation in boiling point, osmotic pressure, depression in freezing point and derivation of the relationship with molecular mass of non-volatile solute and elevation in boiling point. Determination of molecular mass of a solute by: (i) Beckmann's method (ΔT_f) and (ii) Walker-Lumsden method (ΔT_b). Berkeley-Hartley's method (π); (ii) Beckmann's method (ΔT_f) and (iii) Walker-Lumsden method.

References:

1. Applications of mathematics in Chemistry, Kishor Arora and Poonam Sinha.
2. Introductory Maths for Chemists, J. E. Parker.
3. Principles of Physical Chemistry: Puri, Sharma and Pathania, Vishal Publishing House.
4. Essential of Physical Chemistry; Arun Bahl, B.S. Bahi and G.D. Tuli, S. Chand and Co.
5. Physical Chemistry through Problems, S.K. Dogra.
6. Physical chemistry; R. L. Madan, G. D. Tuli, S. Chand & Co.
7. Elements of Physical Chemistry - Glasstone and Lewis - Macmillan.
8. Text book of Physical Chemistry - S. Glasstone- Macmillan (India) Ltd.
9. Numerical Problems on Physical Chemistry- Gashal, Books and Allied (P) Ltd.,
10. Physical Chemistry, P. C. Rakshit, V Edition (1988), Fourth Reprint (1997), Sarat Book House, Calcutta.
11. W. Kauzmann, Kinetic Theory of Gases (Thermal Properties of Matter, Vol I), Benjamin, Reading, MA, 1966.

SECOND SEMESTER

PAPER-II: CHEMISTRY - II

Total Hours: 60

UNIT - I: ANALYTICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Evaluation of Analytical Data

12 hours (16 marks weightage)

Role of analytical chemistry. Classification of analytical methods, types of instrumental, analytical methods on the basis of sample size. Errors- types of errors – determinate and indeterminate errors, accuracy and precision. Distribution of random errors- frequency distributions, normal error curve. Statistical treatment of finite samples. Measures of central tendency- mean, median, range, average deviation, relative average deviation, standard deviation. Accuracy and precision, significant figures, rounding off, determinate and indeterminate errors, ways of expressing accuracy, standard deviation, significant errors and propagation of errors, Gaussian distribution curve for error control charts, the confidence limit, test of significance, rejection of a result, Q. Test.

Chapter 2: Sampling methods

3 hours (04 marks weightage)

Sampling and sample handling, preparation of sample, sample storage, sampling techniques of solid, liquid and gaseous samples. Hazards in sampling.

List of Text books:

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch VIII Edition, 2005, Saunders College Publishing, New York.
2. Analytical Chemistry, G.D. Christian, V Edition, 2001 John Wiley & Sons, Inc, India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, VI Edition, 1993 Prentice Hall, Inc. New Delhi.
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, VI Edition, Third Indian Reprint, 2003, Pearson Education Pvt. Ltd., New Delhi.
5. Analytical Chemistry Principles, John H. Kennedy, II Edition, Saunders College Publishing, California, 1990.

UNIT - II: INORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Chemical bonding

6 hours (8 marks weightage)

Ionic bond: Definition, lattice energy, factors controlling lattice energy, Born-Haber cycle taking NaCl as example, Born-Landé equation (no derivation), significance of the equation, calculations of the lattice energy on the basis of Born-Landé equation, inter nuclear distance between oppositely charged ions, predictive power of thermochemical calculations on ionic compounds, Covalent character in predominantly ionic compounds, Conductivity in ionic solids, solubility of ionic solids and its dependence on lattice energy, polarization, polarizing power, polarizability of ions, variation of polarizing power of cations and anions along a period and down a group, Fajan's rule and its applications.

Chapter-2: Covalent Bond

4 hours (5 marks weightage)

Definition, factors favoring the formation of covalent compounds, VBT- formation of H₂ molecule- (taking Ψ wave functions of atomic orbitals) σ and π bonds with their characteristics, postulates of valence bond theory-electronegativity, polar and non-polar bonds, electronegativity differences, variation of percentage ionic character of the bond-Hanny and Smith equation (problems to be solved). Shapes of simple inorganic molecules and ions based on valence shell electron pair repulsion (VSEPR) theory to NH₃, SF₆, ClF₃ and H₂O.

Concept of hybridization, Rules for obtaining hybrid orbitals, extent of d-orbital participation in molecular bonding (SO₂, PCl₅, SO₃)

Chapter-3: Molecular orbital theory

5 hours (7 marks weightage)

LCAO method, symmetry of molecular orbitals, applications of MOT to homo and hetero-nuclear diatomic molecules, molecular orbital energy level diagrams for N₂, O₂, O₂⁺, O₂²⁻, CO, NO, CN⁻ (prediction of magnetic properties of these species)

References:

1. Principles of Inorganic Chemistry (UGC Syllabus), B.R. Puri, L.R. Sharma, K.C. Kalia, Milestone Publishers, New Delhi, India, 2008.
2. Advanced Inorganic Chemistry by Gurudeep Raj and Chatwal Anand.
3. Modern Inorganic Chemistry by R D Madan.
4. Advanced Inorganic Chemistry by Sathyaprakash.
5. J. E. Huheey, E. A. Keiter and R. L. Keiter, Inorganic Chemistry: Principles of Structure and Reactivity, IV Edition, Pearson Education, India, 2006.
6. F. A. Cotton, G. Wilkinson, C. M. Murillo and M. Bochmann, Advanced Inorganic Chemistry, VI Edition, John Wiley and Sons, Inc., New York, 1999.

UNIT - III: ORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Alkenes

5 hours (6 marks weightage)

Nomenclature. Methods of preparation- dehydration of alcohols, dehydrohalogenation of alkyl halides, partial hydrogenation of alkynes. Addition of HBr to propene - Markownikoff's rule-mechanism. Peroxide effect, mechanism. Reactions- oxidation with acidic KMnO_4 , lead tetra acetate, Bayer's reagent.

Dienes:

Nomenclature and classification of dienes. Preparation of butadiene from 1,4-diols, n-butane. Addition of HBr to butadiene with mechanism. Diel's-Alder reaction with mechanism.

Chapter-2: Alkynes

2 hours (3 marks weightage)

Nomenclature. Preparation from vicinal and gem dihalides. Alkylation of acetylene. Acidity of alkynes. Reactions with ammonical AgNO_3 , Cu_2Cl . Addition reaction: Addition of H_2O , mechanism of addition of HCl to ethyne.

Chapter-3: Arenes and aromaticity

2 hours (3 marks weightage)

Molecular orbital structure of benzene, Huckel's rule of aromaticity, anti aromatic, non-aromatic with example. Non-benzonoid aromatic compounds- cyclopentadienyl anion, cycloheptatrienylcation.

Chapter-4: Substitution and elimination reactions

6 hours (8 marks weightage)

- Aliphatic substitution reaction. S_N^1 , S_N^2 reactions with mechanism, stereochemistry and solvent effect.
- Aromatic substitution reactions. Nitration, bromination, sulphonation, Friedel-Craft alkylation and acylation with mechanism.
Orienting influence on aromatic substitution reaction. Ring activating and deactivating groups.
- E_1 , E_2 reaction with mechanism. Hoffmann elimination and Saytzeff reaction.

References:

- R. T. Morrison and R. N. Boyd, Organic Chemistry, VI Edition, Printice-Hall Of India Limited, New Delhi, 1992.
- B. Y. Paula, Organic Chemistry, III Edition, Pearson Education, Inc. (Singapore), New Delhi, reprint, 2002.
- Jerry March, Advanced Organic Chemistry, IV Edition, John Wiley & Sons, New York, 1992.
- Paula YurkanisBruice, Organic chemistry, III Edition, Pearson Education, Inc. (Singapore), New Delhi, reprint, 2002.
- E. S. Gould, Mechanism and Structure in Organic Chemistry, Halt, Rinhart & Winston, New York, 1964.
- Peter sykes, A Guide book to mechanism in Organic Chemistry, Pearson Education India
- P.S. Kalsi., Stereochemistry and mechanism through solved problems, New Age international publications.
- Organic Chemistry, Bahl and Arun Bahl,, S. Chand and Sons, New Delhi, 2005.

UNIT - IV: PHYSICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Solid State and Crystallography

6 hours (8 marks weightage)

Classification of solids – Isotropic and anisotropic crystals. Elements of symmetry – plane, axes and center of symmetry. Definition of unit cell & space lattice. Laws of crystallography: – (i) Law of constancy of interfacial angles (ii) Law of rationality of indices (iii) Law of symmetry. Representation of planes – Miller Indices, Weiss indices and its calculations using simple examples.

X-ray diffraction by crystals, derivation of Bragg's equation. Determination of crystal structure of NaCl. Liquid Crystals: difference between solids, liquids and liquid- crystals, types of liquid crystals, Classification of liquid crystals into Smectic and Nematic. Applications of Liquid Crystals.

Chapter-2: Ionic equilibria

3 hours (4 marks weightage)

Hydrolysis of salts of weak acids and weak bases. Ionic product of water. Degree of hydrolysis. Effect of temperature and dilution on degree of hydrolysis. pH of solutions. Common-ion effect, buffers, buffer action, Henderson's equation. Solubility product and ionic product in precipitation and in qualitative analysis.

Chapter-3: Phase Equilibria

6 hours (8 marks weightage)

Introduction to the terms: phase, component, degrees of freedom. Statement and derivation of Gibbs phase rule, phase equilibria of one component system, water and Sulphur system. Two component systems: KI-water system. Freezing mixture- definition, examples. Explanation for Congruent melting maximum, congruent melting minimum. Solid solutions – compound formation with congruent melting point (Mg-Zn) and incongruent melting point, (FeCl₃-H₂O) system.

References:

1. Physical chemistry; R. L. Madan, G. D. Tuli, S. Chand & Co.
2. Solid State Chemistry, D.K. Chakrabarty, New Age international.
3. Crystal Engineering: A Textbook, Gautam R. Desiraju, Jagadese J. Vittal, IISc Press
4. Solid State Chemistry and Its Applications, Anthony R. West, John Wiley & Sons.
5. Principles of Physical Chemistry: Puri, Sharma and Pathania, Vishal Publishing Co.
6. A Textbook of Physical Chemistry, Volume 2, K L Kapoor, Mc. Millan publishers India Limited.
7. Physical Chemistry, K. J. Laidler and J. M. Meiser, III Edition, Houghton Mifflin Comp., New, York, International Edition(1999).
8. Physical Chemistry, V Edition, G. M. Barrow, Tata McGraw Hill.
9. Physical Chemistry G. K. Vemulapalli, , Prentice-Hall India Pvt. Ltd.
10. Physical Chemistry, T.W. Atkins, Oxford University Press
11. Physical Chemistry - Walter J. Moore - Orient Longman.
12. Physical Chemistry, K. K. Padmanabha, Lakshmi Printing & Publishing House, Mysore.

THIRD SEMESTER

PAPER-III: CHEMISTRY - III

Total Hours: 60

UNIT - I: ANALYTICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Solvent extraction

8 hours (12 marks weightage)

Definition, types, principle and efficiency of extraction, sequence of extraction process, factors affecting extraction-pH, oxidation state, modifiers, synergistic, masking and salting out agents, techniques-batch, continuous extraction and counter current extraction, applications.

Ultracentrifugation

5 hours (06 marks weightage)

Centrifugation, centrifugal force, sedimentation, centrifugal decantation, centrifuges, selection of centrifuge tubes, preparative, density gradient and isopycnic centrifugation. Analytical sedimentation, sedimentation coefficient, sedimentation velocity-Application of the technique in biological separation; membrane separation-principle and applications.

Ultrafiltration Zone refining techniques

2 hours (02 marks weightage)

Principles, instrumentation and applications.

References:

1. Introduction to Instrumental Analysis – R.D. Braun.
2. Instrumental method of chemical analysis – B.K. Sharma, Goel publishing House, Meerut.
3. Instrumental method of analysis – Willard, merit and Dean, VII Edition .
4. Analytical Chemistry- Gray D. Christian, V edition John Wiley and Sons, Inc.
5. Instrumental Methods of Chemical Analysis- B.K. Sharma, Goel publishing House, Meerut'
6. J. E. Huheey, E. A. Keiter and R. L. Keiter, Inorganic Chemistry: Principles of Structure and Reactivity, IV Edition, Pearson Education, India.
7. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, VI Edition.

UNIT - II: INORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Glass, Cement and paints

4 hours (6 marks weightage)

Glass : Raw materials, manufacture by tank furnace method, colouring agents, annealing of glass, types of glass – soda glass, potash glass, flint glass, pyrex glass (their composition and uses).

Cement: Raw materials, manufacture by dry process, mechanism of setting. Role of water and gypsum in setting process.

Paints: Constituents and their functions, manufacture of white lead by chamber's process and electrolytic process

Chapter-2: p-block elements

5 hours (7 marks weightage)

BF_3 - Preparation, properties, electron acceptor character, applications.

Hydrides of Boron; Diborane - Preparation, properties, structure and bonding and uses.

Borazine - Preparation, properties, structure and uses.,

Carbon and silicon – Structural features of diamond and graphite, CO_2 and SiO_2 – Correlation of their properties with structure.

Fullerenes- Introduction, preparation, properties and uses.

Silicates – Types, structure, ultramarine and zeolites

Chapter-3: d-block and f-block elements

6 hours (7 marks weightage)

d-Block elements: Electronic configuration, general characteristics of transition elements, oxidation states, atomic size, ionization potential, colour, complex formation, magnetic properties and acidic & basic properties of oxides- explanation with reference to 3d-series.

f-Block elements: Lanthanide series-Definition, electronic configuration, oxidation states, colour, complex formation and magnetic properties, lanthanide contraction, its causes and consequences, separation of lanthanides by ion-exchange method, applications of lanthanides.

References:

1. Principles of Inorganic Chemistry (UGC Syllabus), B.R. Puri, L.R. Sharma, K.C. Kalia, Milestone Publishers, New Delhi, India, 2008.
2. Advanced Inorganic Chemistry by Gurudeep Raj and Chatwal Anand
3. Modern Inorganic Chemistry by R D Madan
4. Advanced Inorganic Chemistry by Sathyaprakash.
5. J. E. Huheey, E. A. Keiter and R. L. Keiter, Inorganic Chemistry: Principles of Structure and Reactivity, IV Edition, Pearson Education, India, 2006.
6. F. A. Cotton, G. Wilkinson, C. M. Murillo and M. Bochmann, Advanced Inorganic Chemistry, VI Edition, John Wiley and Sons, Inc., New York, 1999.

UNIT - III: ORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Alcohols

7 hours (9 marks weightage)

Monohydric alcohol- Classification, nomenclature, preparation from alky halides, aldehydes, ketones. Distinguish test between 1^o, 2^o, 3^o by Victor-Meyer method. Lucas method. Test for hydroxyl alcohol- formation of alkoxide, esterification with mechanism, oxidation.

Dihydric alcohol- Nomenclature, preparation of glycol from alkene. oxidative cleavage using lead tetra acetate, periodic acid. Uses of ethylene glycol. Pinacol - Pinacolone rearrangement with mechanism.

Trihydric alcohol- Nomenclature. manufacture of glycol from Spent lye. Synthesis from propene. Reactions of glycol with oxalic acid at different temperatures, reaction with PCl₅, with fatty acids.

Uses of glycerol, preparation of nitroglycerine, composition and uses of Cordite and dynamite.

Chapter-2: Phenols

6 hours (8 marks weightage)

Classification, nomenclature, Methods of preparation from Cumene, Dow process, from diazonium salts.

Acidity of phenols- resonance, stabilization of phenoxide ion, compare the acidity of alcohol and phenol. Effect of substituent's on acidity of phenols, electron withdrawing groups (-NO₂, -Cl, -CN, -CHO, -COOH), electron donating groups (-CH₃, -OCH₃, -NH₂).

Reactions of phenols. Fries, Claisen, Reimerr-Tiemann, Leader-Manase reactions with mechanism.

Synthesis of phenolphthalein, salicylaldehyde, vanillin, o-benzoquinone.

Chapter-3: Ethers and epoxides

2 hours (3 marks weightage)

Chemical reactions of ethers- Cleavage and auto-oxidation. Ziesel's method.

Synthesis of epoxides: acid and base catalyzed ring opening reaction, reactions of epoxides with Grignard and organolithium reagents.

References:

1. I. L. Finar, Organic Chemistry, ELBS Longmann, Vol. I & II, 1984.
2. B.S. Bahl and Arun Bahl, Organic Chemistry, S. Chand and Sons, New Delhi, 2005.
3. R. K. Bansal, Organic Reaction Mechanism, Wiley Eastern Limited, New Delhi, 1993.
4. J. March, Advanced Organic Chemistry, Wiley Interscience, 1994.
5. E. S. Gould, Mechanism and Structure in Organic Chemistry, Halt, Rinhart & Winston, New York, 964.
6. Peter Sykes, A Guide book to mechanism in Organic Chemistry., Pearson Education India.
7. F. A. Carey and Sundberg, Advanced Organic Chemistry – Part A & B, III Edition, Plenum Press, New York, 1990.
8. S. K. Ghosh, Advanced General Organic Chemistry, Book and Allied (P) Ltd, 1998.

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Chemical Kinetics and Catalysis**8 hours (11 marks weightage)**

Review of terms – Rate, Order and Molecularity, comparison between rate order and molecularity. Derivation of expression for the rate constant of a second order reaction with $a = b$ and $a \neq b$. Arrhenius equation, concept of activation energy. Theories of reaction rates: collision theory, transition state theory. Steady state approximation and Lindemann's hypothesis. Experimental determination of kinetics of inversion of cane sugar by polarimetric method.

Catalysis: Types of Catalysis; Homogeneous, Heterogeneous Catalysis, characteristics of catalytic reactions. Brief discussion on theories of Catalysis: The Intermediate Compound Formation Theory, The Adsorption Theory. Enzyme Catalysis: Mechanism of Enzyme Catalysis; Michaelis - Menten equation.

Chapter-2: Electrochemistry-I:**7 hours (9 marks weightage)**

Electrolytes, electrolytic conductance. Debye-Huckel theory of strong electrolytes; asymmetry effect and electrophoretic effect. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only), Transport number, definition and determination by Hittorf's method.

Kohlrausch's law; its applications: determination of degree of dissociation, determination of equilibrium constants of weak electrolytes, determination of solubility product of sparingly soluble salt. Conductometric titrations: Strong acid v/s strong base, weak acid v/s strong base, mixture of acid vs. strong base.

References:

1. Physical chemistry; R. L. Madan, G. D. Tuli, S. Chand & Co.
2. Principles of Physical Chemistry: Puri, Sharma and Pathania, Vishal Publishing Co.
3. A Textbook of Physical Chemistry, Volume 2, K L Kapoor, Mc. Millan publishers India Limited.
4. Chemical Kinetics and Reaction Dynamics, Upadhyay, Santosh K.
5. A Textbook of Physical Chemistry, A. S. Negi, New age
6. Chemical Kinetics, K.J. Laidler, III Edition, Pearson Education Pvt. Ltd., New Delhi,
7. An Introduction to Chemical Kinetics, Margaret Robson Wright, John Wiley.
8. Kinetics and Chemical Reactions, S. K. Jain, Vishal Publishing Co.
9. Electrochemistry, B.K. Sharma , Krishna Prakashan Media (p) Ltd,
10. An Introduction to Electrochemistry, Samuel Glasstone, Litton Educational Publishing, Inc., New York.
11. Physical Chemistry, K. J. Laidler and J. M. Meiser, III Edition, Houghton Mifflin Comp., New, York, International Edition.
12. Industrial Electrochemistry, D. Pletcher and F.C. Walsh, Chapman and Hall, II Edition, 1984.
13. Engineering chemistry, Jain and Jain, Dhanpal and sons.
14. Physical Chemistry, T.W. Atkins, Oxford University Press.
15. Physical Chemistry, K. K. Padmanabha, Lakshmi Printing & Publishing House, Mysore.

FOURTH SEMESTER

PAPER-IV: CHEMISTRY - IV

Total Hours: 60

UNIT - I: ANALYTICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Chromatography

5 hours (8 marks weightage)

General description of chromatography- classification, chromatograms, migration rates of solutes, retention time, capacity factor, selectivity factor, band broadening and column efficiency, plate theory and rate theory. Theory of band broadening, van-Deemter's equation, column resolution, factors influencing resolution.

Chapter-2: Planar Chromatography

4 hours (4 marks weightage)

Paper and thin layer chromatography, stationary and mobile phase, various techniques of development, visualization and evolution of chromatograms, applications.

Chapter-3: Gas Chromatography

4 hours (5 marks weightage)

Introduction and overview of GSC and GLC: Instrumentation, sample injection systems, columns, detectors- TCD, FID, β -ray ionization detectors, temperature programming, applications- quantitative and qualitative analysis.

Chapter-4: HPLC

2 hours (3 marks weightage)

Introduction, superiority of HPLC, instrumentation and applications,

References:

1. Vogel's Text book of Quantitative Chemical Analysis- Revised by G. H. Jaffery, J. Bassett, J. Mendham and R. C. Denny ELBS, V Edition (1996)
2. Introduction to Instrumental Analysis – R.D. Braun 1986.
3. Instrumental method of chemical analysis – B.K. Sharma, Goel publishing House, Meerut 2000.
4. Instrumental method of analysis – Willard, merit and Dean, VII Edition 1998.
5. Analytical Chemistry- Gray D. Christian, V Edition John Wiley and Sons, Inc.
6. Instrumental Methods of Chemical Analysis- B.K. Sharma, Goel publishing House, Meerut, 2000.
7. Quantitative Chemical Analysis- D. C. Harris, W. M. Freeman and Co., NY, USA, IVED, 1995

UNIT - II: INORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Metallurgy

9 hours (13 marks weightage)

Thermodynamics of metallurgy, Ellingham's diagrams- features, applications and limitations, extraction of lead - self-reduction process and nickel from pentlandite, extraction of manganese from pyrolusite from allumino thermite process extraction of gold by hydrometallurgical process, refining of gold by quartation process, beryllium from beryl via sodium beryllium fluoride, Thorium from Monazite sand and Uranium from Pitch blende by acid digestion process.

Chapter-2: Solvents

6 hours (7 marks weightage)

Classification, comparative account of water and liquid ammonia as solvents (striking similarities and factors which make them good polar solvents). Reactions in liquid ammonia and water, acid-base neutralisation, oxidation-reduction, complex formation, ionisation of acetic acid. Solvolysis, solvation, Solubility of ionic solids – its dependence of lattice energy and solvation energy. Solutions of alkali metals in liquid ammonia, advantages and disadvantages of liquid NH_3 as solvents.

References:

1. Principles of Inorganic Chemistry (UGC Syllabus), B.R. Puri, L.R. Sharma, K.C. Kalia, Milestone Publishers, New Delhi, India, 2008.
2. Advanced Inorganic Chemistry by Gurudeep Raj and Chatwal Anand.
3. Modern Inorganic Chemistry by P L Sony.
4. A text book of Industrial Chemistry by B K Sharma.

UNIT - III: ORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Aldehydes and Ketones

5 hours (7 marks weightage)

Nomenclature. Structure and reactivity of carbonyl groups in aldehydes, ketones. Methods of preparation of chloral, acrolein, crotonaldehyde.

Reactions of aldehydes and ketones with hydroxyl amine, hydrogen cyanide, 2,4-DNP. Reaction Mechanism of Aldol, Perkin's, Benzoin, Cannizaro, Knoevenagel reaction. Clemmenson reduction, Wolff-Kishner reduction.

Chapter-2: Carboxylic acids

4 hours (6 marks weightage)

Nomenclature of mono and dicarboxylic acids. Acidity of carboxylic acids. Effect of substituents on acidity. Comparative study of:

- (i) Acetic acid and formic acid.
- (ii) Acetic acid and benzoic acid.
- (iii) Acetic acid and monochloro acetic acid.
- (iv) 2-chloro butanoic acid and chlorobutanoic acid.

Hydroxy acid, effect of heat on α , β and γ – hydroxy acids.

Derivatives of Carboxylic acids: Preparation and reactions of (i) acid chlorides, (ii) acid amides, (iii) acid anhydrides.

Chapter-3: Amines

3 hours (4 marks weightage)

Nomenclature, Classification with examples. Synthesis of amines by reduction of nitro compounds. Hoffmann's degradation methods with mechanism. Basicity of amines. Comparative study of:

- (i) Methyl amine, dimethyl amine and trimethyl amine.
- (ii) Methyl amine and aniline.
- (iii) Aniline and p-nitroaniline and p-toluidine.
- (iv) Aniline, N-methyl aniline and N, N-dimethyl aniline.

Separation of amines by alkylation, nitrous acid method and Heinsberg's method.

Chapter-4: Organosulphur compounds

3 hours (3 marks weightage)

Aromatic sulphonic compounds- thio alcohols, nomenclature and general chemical properties, sulphonal and thioethers. Aromatic sulphonic acids- Nomenclature, general methods of preparations, general chemical properties. Reactions due to SO_3H group and benzene ring.

Synthesis of Saccharin, Chloramine-T and Dichloramine-T.

References:

1. S.H. Pine, Organic Chemistry, 5th Edition, Mcgraw Hill International Edition, Chemistry Series, New York, 1987.
2. I. L. Finar, Organic Chemistry, VI Edition, ELBS, 1990.
3. Bahl and Arun Bahl, Organic Chemistry, S. Chand and Sons, New Delhi, 2005.
4. Arun Bahl and B.S. Bahl, Advanced Organic Chemistry, S. Chand.
5. V. K. Ahluwalia , Textbook of Organic Chemitry, Viva Books Private Limited, 2012.
6. S. K. Ghosh, Advanced General Organic Chemistry, Book and Allied (P) Ltd, 1998.

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Electrochemistry-II**6 hours (8 marks weightage)**

Definition of EMF of a cell, standard electrode potential, IUPAC sign convention; Types of reversible electrodes with examples: gas-metal ion, metal-ion, metal insoluble salt-anion electrode, Redox electrode with examples – Quinhydrone electrode (To be mentioned). Reference electrodes – Construction and working of SHE and calomel electrode. Concentration cell – Derivation of EMF using Nernst equation for electrolytic concentration cell without transference. Liquid junction potentials, elimination of liquid junction potential. Potentiometric titration involving only redox systems ($K_2Cr_2O_7$ vs. FAS).

Chapter-2: Photochemistry**5 hours (7 marks weightage)**

Laws of photochemistry- Grothus-Draper's law and Stark-Einstein's law of photochemical equivalence. Quantum yield and explanation for Photochemical reactions of hydrogen-iodine, hydrogen-chlorine and hydrogen-bromine. Qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, inter-system crossing), Jablonski diagram. Photosensitized reactions - simple examples, chemiluminescence, bioluminescence.

Chapter-3: Colloids**4 hours (5 marks weightage)**

Definition of colloids, classification of colloids; Lyophilic and Lyophobic Colloids. Solids in liquids (sols): properties – kinetic, optical and electrical; stability of colloids, protective action, Hardy—Schulze law, gold number. Liquids in liquids (emulsions): types of emulsions, preparation, Emulsifier. Liquids in solids (gels): preparation and properties, association colloids (micelles). General application of colloids.

References:

1. Physical chemistry; R. L. Madan, G. D. Tuli, S. Chand & Co.
2. Principles of Physical Chemistry: Puri, Sharma and Pathania, Vishal Publishing Co.
3. Textbook of Physical Chemistry, Gurdeep Raj, Goel Publications
4. Elements of Physical Chemistry, B.R. Puri, L.R. Sharma, M.S. Pathania, I Edition, Vishal Publishing House, Jalandhar, India, 2013.
5. Electrochemistry, B.K. Sharma, Krishna Prakashan Media (p) Ltd,
6. An Introduction to Electrochemistry, Samuel Glasstone, Litton Educational Publishing, Inc., New York.
7. Physical Chemistry, K. J. Laidler and J. M. Meiser, III Edition, Houghton Mifflin Comp., New, York, International Edition.
8. Industrial Electrochemistry, D. Pletcher and F.C. Walsh, Chapman and Hall, II Edition, 1984.
9. Photochemistry, Gurdeep Raj, Goel Publications.
10. Photochemistry, J. G. Calvert and J. N. Pitts, Wiley, New York.
11. Fundamentals of Photochemistry, K. K. Rohatgi - Mukherjee, New Age International Pub., Reprint 2006.
12. Molecular Energy Transfer, R. Levine and J. Jortner, eds., J. Wiley, New York.
13. A Textbook of Physical Chemistry, Volume 2, K L Kapoor, Mc. Millan publishers India Limited.
14. Physical Chemistry, T.W. Atkins, Oxford University Press.
15. Physical Chemistry, K.K. Padmanabha, Lakshmi Printing & Publishing House, Mysore.

FIFTH SEMESTER

PAPER-V: CHEMISTRY - V

Total Hours: 45

UNIT - I: ANALYTICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Gravimetry

7 hours (13 marks weightage)

General principles, condition for precipitations, choice of precipitation, advantages of using organic precipitants, factors influencing the solubility of the precipitate, theories of precipitation, co-precipitation, post-precipitation, effect of digestion, PFHS, pH change, ion releasing reagents, change in oxidation states (taking Fe, Cu and Al as examples), use of mixed solvents and analytical applications

Chapter-2: UV-Visible spectroscopy

4 hours (7 marks weightage)

Range, frequency and energy of UV radiations, interaction of UV radiation with organic molecules, types of transitions, allowed and non-allowed transitions, Concept of chromophores and auxochromes, bathochromic shift and hypso chromic shift, hyper chromic effect and hypo chromic effect.

Comparison of λ_{\max} organic compounds taking following examples giving reasons

1. CH_3CHO and $\text{C}_6\text{H}_5\text{CHO}$
2. Ethylene and 1,3-butadiene
3. Cis and transstilbene
4. Cis-trans cinnamic acid

Chapter-3: IR spectroscopy

4 hours (7 marks weightage)

Range, frequency and energy of IR radiations, interaction of IR radiation with organic molecules, molecular vibrations – stretching and bending vibrations, Hook's law, finger print region, Stretching frequency of functional groups in benzaldehyde, acetophenone, ethyl acetate, aniline and methyl amine.

References:

1. Vogel's Text book of Quantitative Chemical Analysis- Revised by, G. H. Jaffery, J. Bassett, J. Mendham and R. C. Denney, ELBS V Edition (1989), John Wiley and Sons. Inc. New York.
2. Introduction to Instrumental Analysis – R.D. Braun 1986.
3. Instrumental method of chemical analysis – B.K. Sharma, Goel publishing House, Meerut 2000.
4. Instrumental method of analysis – Willard, merit and Dean, VII Edition, 1998.
5. Analytical Chemistry- Gray D. Christian, V Edition, John Wiley and Sons, Inc.
6. Instrumental Methods of Chemical Analysis-B.K. Sharma, Goel publishing House, Meerut, 2000.
7. Quantitative Chemical Analysis- D. C. Harris, W. M. Freeman and Co., NY, USA, IV Edition, 1995.

Chapter-1: Electroplating**10 hours (18 marks weightage)**

Theory, purpose of electroplating, nature of good deposit, factors influencing electroplating (concentration of metal ion, pH, temperature, current density), electroplating of chromium and gold.

Ceramics-Raw materials and their role, varieties of clay, production of ceramic ware, glazing insulators.

Refractories-Classification, properties, hardness, pyrometric cone equivalent values.

Abrasives- Classification, properties, hardness of abrasives, Moh's scale, manufacture and importance of carborundum.

Chapter-2: Alloys**5 hours (9 marks weightage)**

Definition, purpose of making alloys, preparation of alloys by electro deposition method and powder metallurgy method, advantages of powder metallurgy, influence of carbon, manganese, nickel, chromium, tungsten, silicon and cobalt on the properties of steel, heat treatment of steel, hardening, tempering and annealing, case hardening of steel-carbiding and nitriding.

References:

1. Advanced Inorganic Chemistry, V Edition, F.A. Cotton and G. Wilkinson; John Willey and sons, 1988.
2. Inorganic Chemistry; Principles of structure and reactivity, III Edition, James E Huheey, Ellen E. Keither and Richard L. Keither, Harper Collins college Pub., 1983.
3. Inorganic Chemistry 3rd ed., Shriver and Atkins, Oxford University Press, 1999.
4. Organometallic Chemistry, A Unified approach R.C. Mehrotra and A. Singh. Willey Eastern, New Delhi.
5. A text book of Industrial Chemistry by B.K. Sharma
6. A concise Inorganic Chemistry, J .D. Lee, ELBS Ed., 1991
7. Modern aspects of Inorganic Chemistry, H. J. Emeleus and A. G. Sharpe, ELBS.
8. Theoretical Principles of Inorganic Chemistry, IV ed., G. S. Manku, Tata, McGraw Hill, 1990

Chapter-1: Purification of organic compounds**4 hours (7 marks weightage)**

Methods for purification of solids- crystallization, fractional crystallization and sublimation. Methods for purification of liquids- Distillation, Fractional distillation, distillation under reduced pressure, steam distillation. Criteria of purity- Melting point and boiling point.

Chapter-2: Heterocyclic compounds**4 hours (7 marks weightage)**

Preparation and reactions of pyrrole, furan, thiophene, pyridine, pyrimidine, indole, quinoline, isoquinoline. Aromaticity of pyrrole, furan, thiophene. Basicity of pyrrole and pyridine.

Chapter-3: Dyes**3 hours (5 marks weightage)**

Classification of dyes with example. Chromophore theory, Modern theory. Synthesis of, Congo Red, Malachite Green, Methyl Orange and Indigo. Structural elucidation and synthesis of Alizarin.

Chapter-4: Polymer Chemistry**4 hours (7 marks weightage)**

Classification of polymers-Types of polymerization, Mechanism of Free radical and ionic polymerization. Examples for addition polymers and condensation polymers. Zeigler-Natta catalyst. Thermoplastics and thermosetting plastics. Synthesis of Styrene, Teflon, Nylon-6, Nylon-6,6, Bakelite, PVC, polythene and Natural rubber.

References:

1. Arun Bahl and B.S. Bahl, Advanced Organic Chemistry, S. Chand.
2. Paula Yurkanis Bruice, Organic chemistry, III Edition, Pearson Education, Inc. (Singapore), New Delhi, reprint, 2002.
3. Gurdeep Chatwal, Chemistry of Organic Natural Products, Vol 1 and 2, Goel Pub. House, 2002.
4. R. K. Bansal, Heterocyclic Chemistry.
5. S. H. Pine, Organic Chemistry, 5th Edition, Mcgraw Hill International Edition, Chemistry Series, New York, 1987.
6. Bill Meyer Text Book of Polymer Science, F.W. Jr. John Wiley & Sons 1984.
7. Gowarikar. V.R. Viswanathan, N.V. Jayadev Sreedhar. "Polymer Science".
8. Sharma. B.K., Polymer Chemistry, Goel Publishing House, Meerut- 1989.
9. Arora M.G. Vadar M.S., Polymer Chemistry. Anmol Publications Pvt. Ltd., New Delhi 1989.

FIFTH SEMESTER

PAPER-VI: CHEMISTRY - VI

Total Hours: 45

UNIT - I: PHYSICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Chapter- 1: Thermodynamics - I

8 hours (14 marks weightage)

Review of the thermodynamics terms; system, surroundings etc, types of systems, state and path functions. Work done in isothermal expansion and compression of an ideal gas. Heat capacity of a gas at constant pressure and constant volume: relationship between C_p and C_v . Derivation of Kirchoff's equation. Limitations of I law of thermodynamics with illustrations. Need for II-law of thermodynamics, different ways of stating II-law with respect to heat and spontaneity. Heat engine - Carnot's cycle and derivation of the expression for its efficiency. II-law in terms of efficiency (η). Concept of entropy and its physical significance. Entropy changes in reversible isothermal process. Entropy changes of an ideal gas in different processes; entropy of mixing, standard entropies. Free energy: Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities. Variation of G and A with pressure, volume and temperature.

Chapter-2: Fundamentals of Molecular Spectroscopy

7 hours (13 marks weightage)

Electromagnetic radiation and its interaction with matter, regions of the EM spectrum, Origin of molecular spectra: Born-Oppenheimer approximation. Types of molecular spectra-rotation, vibration, electronic, Raman (to be mentioned).

Electronic spectroscopy: Qualitative description of electronic transition in σ , π and n molecular orbitals and their energy levels, selection rules and Franck-Condon principle.

Raman Spectroscopy:

Concept of Polarizability. Raman spectra, Stokes and anti Stokes lines, selection rules. Instrumentation. Applications of Raman spectroscopy, comparison of Raman and IR spectroscopies.

References:

1. Physical chemistry; R. L. Madan, G. D. Tuli, S. Chand & Co.
2. Principles of Physical Chemistry: Puri, Sharma and Pathania, Vishal Publishing Co.
3. Textbook of Physical Chemistry, Gurdeep Raj, Goel Publications House, New Delhi.
4. Elements of Physical Chemistry, B.R. Puri, L.R. Sharma, M.S. Pathania, I Edition, Vishal Publishing House, Jalandhar, India, 2013.
5. Molecular Structure and Spectroscopy, Aruldas, Printice Hall, India Pvt. Ltd.
6. A Textbook of Physical Chemistry, Volume 2, K.L. Kapoor, McMillan Publishers, India Limited.
7. Physical Chemistry, K. J. Laidler and J. M. Meiser, III Edition, Houghton Mifflin Comp., New, York, International Edition.
8. Molecular Energy Transfer, R. Levine and J. Jortner, eds., J. Wiley, New York.
9. A Textbook of Physical Chemistry, Volume 2, K L Kapoor, McMillan McMillan Publishers, India Limited.

10. Physical Chemistry, T.W. Atkins, Oxford University Press.
11. Physical Chemistry – A Molecular Approach, Donald A. McQuarrie, John D. Simon, III Edition (Viva Student Edition), Viva Books Pvt. Ltd., New Delhi.
12. Thermodynamics, Kinetic Theory, and Statistical Thermodynamics, Francis W. Sears Gerhard L. Salinger, III Edition, Narosa Publishing House, New Delhi.
13. Principles of Physical Chemistry, S. H. Maron, C. F. Prutton, Mc. Milan.
14. J. D. Lambert, Vibrational and Rotational Relaxation in Gases, Oxford University Press, Oxford, 1977.
15. Advanced Physical Chemistry, D. N. Bajpai, S. Chand & Co.

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Microwave spectroscopy**4 hours (6 marks weightage)**

Spectrum of electromagnetic radiations, interaction of electromagnetic radiations with molecules, quantisation of different forms of energies in molecules. Condition for energy absorption by molecules (emissions and absorption spectrum). Spectroscopic terms, classification, types of molecules, (microwave active and microwave inactive), Linear molecules, spherical top molecules, symmetric top molecules, asymmetric top molecules. Applications of Microwave spectroscopy

Chapter-2: NMR Spectroscopy**6 hours (12 marks weightage)**

Introduction to NMR spectroscopy: instrumentation, theory and types of NMR active nuclides. Relaxation process - Spin-Spin relaxation, Spin-lattice relaxation, number of signals, shielding and deshielding effects, influencing chemical shifts. [Inductive effect, van der Waal's deshielding, anisotropic effects, hydrogen bonding]

Solvents used, spectra of CH_3OH , $\text{C}_2\text{H}_5\text{OH}$, and $\text{C}_6\text{H}_5\text{CH}_3$, peak area and proton counting, splitting of the signals (Pascal's triangle), spin-spin coupling, splitting signal by proton. Calculating the ratio in the heights of the signals. Applications of NMR spectroscopy.

Chapter-3: Mass Spectroscopy**5 hours (9 marks weightage)**

Basic principles- Theory of mass spectroscopy, instrumentation, mass spectrum, the molecular ion peak, determination of molecular formula, Mc-Lafferty rearrangement. Metastable ion peaks and their importance. Nitrogen rule. General transformation modes. Homolytic cleavage-heterolytic cleavage. Retro-Deil's Alder reactions. Important features of mass spectra of hydrocarbons - alkanes, alkenes and cycloalkenes.

References:

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch VIII Edition, 2005, Saunders College Publishing, New York.
2. Analytical Chemistry, G.D. Christian, V Edition, 2001 John Wiley & Sons, Inc, India.
3. Quantitative Analysis, R.A. Day and A.L. Underwood, VI Edition, 1993 prentice Hall, Inc. New Delhi.
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, VI Edition.
5. Analytical Chemistry Principles, John H. Kennedy, II Edition, Saunders College Publishing, California, 1990.
6. Instrumental Methods of Analysis by H.H. Willard, L.L. Merritt and J.A. Dean, VII Edition, CBS Publishers, New Delhi, 1988.
7. Principles and Practice of Analytical Chemistry, F. W. Fifield and Kealey III Edition, 2000, Blackwell Sci., Ltd. Malden, USA.
8. Modern Analytical Chemistry, David Harvey, McGraw Hill, New Delhi, 2000.
9. Introduction to Instrumental Analysis, Braun, Pharm. Med. Press. India.

UNIT - III: INORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Co-ordination Chemistry

10 hours (18 marks weightage)

Double salts, complex salts, definition of terms-complex ion, ligand, co-ordination number, co-ordination sphere. Types of ligands with example-monodentate, bidentate, polydentate, Ambidentate and macro cyclic ligands (crown ethers, porphyrins).

Methods of detection of complex formation- conductivity, pH, colour, EAN rule for Stabilising of Complexs. Nomenclature of complex compounds. Isomerism in complex compounds: a) Structural isomerism-Ionization isomerism, hydrate isomerism, linkage isomerism and co-ordinate isomerism, b) Optical and geometrical isomerism in complex compounds with co-ordination number 4 and 6.

Stability of complex compounds- Stepwise stability constant, overall formation constant, factors influencing the stability of complexes-Nature of metal ion, nature of ligands, chelation and macrocyclic effects. Applications of complex formation in (a) Metallurgy (in the extraction of nickel and gold) (b) Qualitative and quantitative analysis.

Valence Bond Theory (VBT)

Valence bond theory as applied to complexes- inner and outer orbital complexes. The structure and geometry of the following complexes to be discussed:

1. $[\text{Fe}(\text{CN})_6]^{2-}$
2. $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$
3. $[\text{MnCl}_4]^{2-}$
4. $[\text{Ni}(\text{CO})_4]^{2-}$
5. $[\text{Cu}(\text{NH}_3)_4]^{2+}$

Modification of VBT :Electroneutrality principle of $[\text{Be}(\text{H}_2\text{O})]^{2+}$ and back bonding effect with respect to $[\text{Ni}(\text{CO})_4]^{2-}$.

Crystal Field Theory (CFT)

Splitting of d-orbitals in octahedral and tetrahedral fields, effect of weak and strong field ligands, spectrochemical series of ligands, crystal field stabilization energy and calculation of CFSE for different systems.

Chapter-2: Metal Carbonyls

5 hours (08 marks weightage)

Definition, Preparation of chromium, iron, Manganese, Cobalt carbonyls, stability of carbonyls based on 18 electron rule, Structure and bonding of $\text{Cr}(\text{CO})_6$, $\text{Fe}(\text{CO})_5$, $\text{Mn}_2(\text{CO})_{10}$, Uses of metal Carbonyls

References:

1. Principles of Inorganic Chemistry (UGC Syllabus), B.R. Puri, L.R. Sharma, K.C. Kalia, Milestone Publishers, New Delhi, India, 2008.
2. Advanced inorganic Chemistry by Gurudeep Raj and ChatwalAnand
3. Modern Inorganic Chemistry by R D Madan
4. Advanced inorganic Chemistry by Sathyaprakash ,Vol-2

SIXTH SEMESTER

PAPER-VII: CHEMISTRY - VII

Total Hours: 45

UNIT - I: ORGANIC CHEMISTRY

Total Hours: 15

Chapter - 1: Stereochemistry of organic compounds **9 hours (17 marks weightage)**

Concept of isomerism, Optical isomerism, elements of symmetry, molecular chirality. Enantiomers, properties of enantiomers, optical isomerism in Lactic acid and tartaric acid. R and S notations. Optical activity due to helicity.

Diastereomers. Threo and erythrodiastereomers. Racemisation, resolution of racemic modifications (chemical and biological methods), Walden inversion, asymmetric synthesis.

Geometrical isomerism: Geometric isomerism in maleic acid and fumaric acid. Determination of their configurations. E and Z notations. Geometrical isomerism of oximes, Determination of configuration of oximes. Beckmann rearrangement. Conformational isomers of ethane, 1,2-dichloroethane and cyclohexane.

Chapter-2: Drugs **3 hours (5 marks weightage)**

Classification of drugs. Synthesis of aspirin, paracetamol, tetracyclin. Use of chloroquin.

Chapter-3: Retrosynthesis **3 hours (5 marks weightage)**

Retrosynthesis of benzocaine, 4-methoxy acetophenone, saccharin. Disconnection approach. General terms: synthon, synthetic equivalents and target molecule. General guidelines for disconnection.

References:

1. I. L. Finar, Organic Chemistry, ELBS Longmann, Vol. I & II, 1984.
2. Alex V. Ramani, Leo A. Stanley, C. Mani, Stereochemistry, MJP Publishers.
3. Introduction to stereochemistry – K. Mislow.
4. R. K. Bansal, Organic Reaction Mechanism, Wiley Eastern Limited, New Delhi, 1993.
5. J. March, Advanced Organic Chemistry, Wiley Interscience, 1994.
6. E. S. Gould, Mechanism and Structure in Organic Chemistry, Halt, Rinhart & Winston, New York, 1964.
7. Peter Sykes, A Guide book to mechanism in Organic Chemistry, Pearson Education India.
8. P.S. Kalsi, Stereochemistry and mechanism through solved problems, New Age International Publications.
9. Stuart Warren, Paul Wyatt, Organic Synthesis: The Disconnection Approach, John Wiley & Sons.
10. F. A. Carey and Sundberg, Advanced Organic Chemistry – Part A & B, III Edition, Plenum Press, New York, 1990.
11. D. Nasipuri, Stereochemistry of Organic Compounds, II Edition, Wiley Eastern Limited, New Delhi, 1991.
12. S. K. Ghosh, Advanced General Organic Chemistry, Book and Allied (P) Ltd, 1998.

(Note: Numerical problems must be solved wherever necessary)

Chapter - 1: Physical Properties and Chemical Constitution**6 hours (10 marks weightage)**

Additive properties, constitutive properties, additive-constitutive properties (definitions). Polarization: Induced, orientation and molar polarization. Clausius - Mossotti equation. Dipole moment and structure of molecules - planar and non-planar, differentiating between cis and trans isomers. Parachor: meaning and its use in determining chemical constitution and molecular structure. Molar refraction and its application in elucidating molecular structure. Brief account of magnetic properties - paramagnetic, diamagnetic and ferromagnetic systems. Magnetic susceptibility and its importance.

Chapter-2: Nanomaterials and Polymers**4 hours (8 marks weightage)**

Nanomaterials: General characteristics, a brief and elementary account of synthetic methods; bottom-up method, top-down method, examples (detailed mechanism is not required), general applications of nanomaterials.

Polymers: Definition, classification, degree of polymerization, expressions for number average and weight average molecular weights. Determination of molar mass of polymers by viscosity method (Ostwald's viscometric method).

Chapter-3: Surface and Interfacial Chemistry**5 hours (9 marks weightage)**

Adsorption; types of adsorption and adsorption isotherms, Solid-liquid interfaces: Gibbs adsorption isotherm (expression only). Solid-gas interfaces. – Langmuir isotherm (derivation), Temkin and BET isotherm (expression only). Determination of surface concentration of adsorbents using BET isotherm. Kinetics of enzymatic reactions: Michaelis-Menten equation, effect of temperature and pH.

References:

1. Physical chemistry; R. L. Madan, G. D. Tuli, S. Chand & Co.
2. Principles of Physical Chemistry: Puri, Sharma and Pathania, Vishal Publishing House, Jalandhar, India, 2014.
3. Textbook of Physical Chemistry, Gurdeep Raj, Goel Publications
4. Elements of Physical Chemistry, B.R. Puri, L.R. Sharma, M.S. Pathania, I Edition, Vishal Publishing House, Jalandhar, India, 2013.
5. A Textbook of Physical Chemistry, Volume 2, K L Kapoor, Mc.Millan Publishers India Limited.
6. Physical Chemistry, T.W. Atkins, Oxford University Press.
7. Physical Chemistry – A Molecular Approach, Donald A. McQuarrie, John D. Simon, III Edition (Viva Student Edition), Viva Books Pvt. Ltd., New Delhi.
8. Principles of Physical Chemistry, S. H. Maron, C. F. Prutton, Mc.Millan Publishers India Limited.
9. Electrochemistry, B.K. Sharma, Krishna Prakashan Media (p) Ltd.
10. An Introduction to Electrochemistry, Samuel Glasstone, Litton Educational Publishing, Inc., New York.

11. New Directions in Solid State Chemistry, C.N.R.Rao, J. Gopalakrishna, Cambridge University Press.
12. Introduction to nanoscience, Gabor L. Hornyak, Joydeep Dutta, Harry F.Tibbals, Anil K. Rao, CRC Press.
13. Nanotechnology, S.Shanmugam, MJP Publishers, Chennai (2010).
14. A Handbook on Nanochemistry, Patrick Salomon, Dominant Publishers and Distributers, New Delhi.
15. Nanotechnology: Importance and applications, M.H. Fulekar, IK International.
16. Supramolecular chemistry- Concepts and Perspectives, J.M. Lehn, Wiley-VCH.
17. Physical Chemistry, K. K. Padmanabha, Lakshmi Printing & Publishing House, Mysore.

UNIT - III: ANALYTICAL CHEMISTRY

Total Hours: 15

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Radio Chemical Methods of Analysis 8 hours (10 marks weightage)

Radiation dose, G-value primary and secondary processes, radiolysis of water vapour, Dosimeter-Fricke dosimeter and ceric sulphate dosimeter, Introduction, nature of radioactivity, radiometric units, detection and measurement of radioactivity, disintegration, rate of disintegration, radioactive traces, tracer techniques, applications in analytical chemistry, isotopic dilution analysis, activation analysis, radiometric analysis and applications.

Chapter-2: Thermal methods of analysis 4 hours (10 marks weightage)

Introduction, thermogravimetric analysis (TGA), types of thermogravimetric analysis, principle and method. Automatic thermogravimetric analysis, instrumentation, types of recording thermobalances, Introduction, instrumentation and application of DSC and DTA.

Chapter-3: Kinetic methods of analysis 3 hours (6 marks weightage)

Kinetics- the basics, Enzyme Catalysis properties of enzymes, enzyme inhibitors and activators, some examples of enzyme analysis.

References:

1. Vogel's Text book of Quantitative Chemical Analysis- Revised by G. H. Jaffery, J. Bassett, J. Mendham and R. C. Denny ELBS, V Edition (1996).
2. Introduction to Instrumental Analysis – R.D. Braun 1986.
3. Instrumental method of chemical analysis – B.K. Sharma, Goel publishing House, Meerut 2000.
4. Instrumental method of analysis – Willard, merit and Dean, VII Edition 1998.
5. Analytical Chemistry- Gray D. Christian, V Edition John Wiley and Sons, Inc.
6. Instrumental Methods of Chemical Analysis-B.K.Sharma, Goel publishing House, Meerut, 2000.
7. Quantitative Chemical Analysis- D. C. Harris, W. M. Freeman and Co., NY, USA, IVED, 1995.

SIXTH SEMESTER

PAPER-VIII: CHEMISTRY - VIII

Total Hours: 45

UNIT - I: INORGANIC CHEMISTRY

Total Hours: 15

Chapter-1: Inorganic polymers

5 hours (9 marks weightage)

Silicones: Types, preparation (Linear, branched and cyclic), properties and applications. Fluorocarbons: Definition, examples, properties, manufacture of Teflon and uses. Phosphazenes: Preparation, properties and nature of bonding in triphosphazenes. S-N ring compounds (S_4N_4 and S_2N_2): Preparation, properties and uses.

Chapter-2

3 hours (5 marks weightage)

Organometallic Compounds

Definition, Classification, Based on Hapticity and Based on Group, 18 electron rule, Structure of ferrocene and Chromocene.

Chapter-3: Bio-inorganic Chemistry

7 hours (13 marks weightage)

Elements in biological systems- metals and nonmetals, bulk metals and trace metals. Iron: Co-ordination environment in Haeme, Role of haemoglobin in oxygen transportation. Zinc: Zinc containing metalloenzymes- role of carbonic anhydrase and carboxy peptidase. Magnesium: Co-ordination environment in chlorophyll, skeletal structure of chlorophyll, role of chlorophyll in photosynthesis. Cobalt: Vitamin B_{12} , Molybdenum: Nitrogenase.

References:

1. Principles of Inorganic Chemistry (UGC Syllabus), B.R. Puri, L.R. Sharma, K.C. Kalia, Milestone Publishers, New Delhi, India, 2008.
2. Advanced Inorganic Chemistry by Gurudeep Raj and Chatwal Anand.
3. Modern Inorganic Chemistry by P L Sony.
4. A text book of Industrial Chemistry by B K Sharma.
5. A text book of Bioinorganic chemistry by Hussain Reddy.

UNIT - II: ORGANIC CHEMISTRY

Total Hours: 15

Chemistry of Natural products.

Chapter-1: Carbohydrates

5 hours (8 marks weightage)

Classification and nomenclature of carbohydrates. Monosaccharides- Mechanism of formation of osazone from glucose and fructose. Inter-conversion of glucose and fructose. Chain lengthening and chain shortening of aldoses, configuration of glucose and fructose. Epimerization (conversion of glucose into mannose). Formation of glycosides. Determination of ring size of D(+) glucose. Elucidation of cyclic structure of D(+) glucose. Constitution of D(+) Fructose. Determination of ring size of D(-) Fructose (six membered ring). Mechanism of mutarotation.

Disaccharides- Elucidation of structure of maltose and sucrose. Polysaccharides- Structure of starch and cellulose.

Chapter-2: Amino acids and proteins**4 hours (7 marks weightage)**

Definitions and classification of amino acids, synthesis of amino acids by Gabriel phthalimide, malonic ester and Strecker's method of synthesis.

Properties and reactions- Zwitter ion and isoelectric points. Ninhydrin and Biuret tests.

Peptides: peptide bond, carbobenzoxy method of synthesis of peptides.

Proteins: Classification based on composition and structure: primary and secondary structures of proteins. Denaturation of proteins.

Chapter-3: Alkaloids**2 hours (4 marks weightage)**

Definition, method of isolation, structural elucidation of nicotine and its synthesis by Spath process. Structure and uses of atropine and cocaine.

Chapter-4: Terpenes**2 hours (4 marks weightage)**

Classification and isolation. isoprene rule, structure of menthol, camphor, geraniol, α -terpineol and zingiberene. Structural elucidation of citral and its synthesis from methyl heptenone.

Chapter-5: Enzymes and nucleic acids**2 hours (4 marks weightage)**

Classification, active site, factors affecting activity of enzymes with explanation. Mechanism of enzyme catalysis (chymotrypsin as example).

Synthesis of nucleosides and nucleotides. Hydrogen bonding in DNA.

References:

1. O. P. Agarwal, Chemistry of Organic Natural Products, Vol 1 and 2, Goel Pub. House, 2002.
2. Gurdeep Chatwal, Chemistry of Organic Natural Products, Vol 1 and 2, Goel Pub. House, 2002.
3. Bahl and Arun Bahl, Advanced Organic Chemistry, S. Chand and Sons, New Delhi, 2005.
4. Lubert Stryer, Biochemistry, W. H. Freeman and company, New York, 1975.
5. Robert L. Caret, Katherine J. Denniston, Joseph J. Topping, Principles and Applications of organic and biological chemistry, WBB publishers, USA, 1993.
6. J. L. Jain, Biochemistry, Sultan Chand and Co. 1999
7. A. Mazur and B. Harrow, Text book of Biochemistry, 10th Edition, W.B. Saunders Co., Philadelphia, 1971.
8. Paula Yurkanis Bruice, Organic Chemistry, III Edition, Pearson Education, Inc. (Singapore), New Delhi, reprint, 2002.

(Note: Numerical problems must be solved wherever necessary)

Chapter-1: Thermodynamics-II: 6 hours (10 marks weightage)

Clausius-Clapeyron equation (derivation) and its applications. Nernst heat theorem; statement and concept of residual entropy, evaluation of absolute entropy. Third law of thermodynamics. Partial molar quantities; Concept of chemical potential, variation of chemical potential with temperature and pressure, derivation of Gibbs-Duhem equation, Duhem-Margules equation and its application.

Chapter-2: Elementary Quantum Mechanics 4 hours (7 marks weightage)

Physical interpretation of the wave function. Postulates of quantum mechanics, Schrödinger wave equation based on the postulates of quantum mechanics and its importance. Eigen values and Eigen functions, Hamiltonian operator. Application of Schrödinger equation to Particle in a one dimensional box (derivation).

Chapter-3: Statistical Thermodynamics 5 hours (9 marks weightage)

Energy states: macro and microstates, Limitation of classical thermodynamics, Distinguish between classical mechanics and statistical mechanics. Sterling approximation, derivation of Maxwell-Boltzmann statistics, statistical interpretation of entropy, application of statistics to gases-monoatomic ideal gas (No derivations). Partition functions and thermodynamic parameters, expressions for translational, rotational, vibrational and electronic partition functions, enthalpy, energy, Gibbs free energy.

References:

1. Physical chemistry; R. L. Madan, G. D. Tuli, S. Chand & Co.
2. Principles of Physical Chemistry: Puri, Sharma and Pathania, Vishal Publishing Co.
3. A Textbook of Physical Chemistry, Volume 2, K L Kapoor, Mc. Millan publishers India Limited.
4. A Textbook of Physical Chemistry, A. S. Negi, New age
5. Physical Chemistry, K. J. Laidler and J. M. Meiser, III Edition, Houghton Mifflin Comp., New, York, International Edition.
6. Industrial Electrochemistry, D. Pletcher and F.C. Walsh, Chapman and Hall, II Edition, 1984.
7. Physical Chemistry, T.W. Atkins, Oxford University Press
8. Advanced Physical Chemistry, D. N. Bajpai, S. Chand & Co.
9. Quantum Chemistry, R.K. Prasad, 4th Edition, New Age International Publishers, New Delhi.
10. Quantum Mechanics for Chemists, David O. Hayward, The Royal Society of Chemistry, UK.
11. Quantum Chemistry, John P. Lowe, Kirk A. Peterson, III Edition, Academic Press, London, UK.
12. Quantum Chemistry, Donald A. McQuarrie, I Indian Edition, Viva Books Pvt. Ltd., New Delhi.
13. Quantum Chemistry, Ira N. Levine, V Edition, Pearson Education Pvt. Ltd., New Delhi.

KUVEMPU UNIVERSITY

PRACTICALS FOR B.Sc. COURSE (CHEMISTRY)- 2016

FIRST SEMESTER - PRACTICALS (3 HOURS PER WEEK)

PAPER - I: VOLUMETRIC ANALYSIS

1. Calibration of pipette, burette, standard flask (100mL).
2. Preparation of standard solution of Sodium carbonate, standardization of HCl and estimation of NaOH.
3. Preparation of standard solution of potassium biphthalate, standardization of sodium hydroxide solution and estimation of HCl/H₂SO₄.
4. Preparation of standard solution of oxalic acid, standardization of KMnO₄ solution and estimation of Mohr's salt solution.
5. Preparation of standard Mohr's salt solution, standardization of K₂Cr₂O₇ and estimation of Ferric chloride solution (diphenylamine indicator).
6. Preparation of standard solution of ZnSO₄, standardization of EDTA and estimation of hardness of water.
7. Preparation of standard solution of K₂Cr₂O₇, standardization of sodium thiosulphate solution and estimation of copper in copper sulphate solution.
8. Estimation of available chlorine in bleaching powder.
9. Determination of acetic acid in commercial vinegar using NaOH.
10. Determination of alkali content – antacid tablet using HCl.
11. Estimation of calcium content in a sample Eg., chalk as calcium oxalate.

Note: A minimum of EIGHT experiments must be performed and recorded.

SECOND SEMESTER - PRACTICALS (3 HOURS PER WEEK)

PAPER - II: Inorganic Qualitative Analysis

Systematic Semi-Micro Inorganic Qualitative Analysis of a salt mixture containing Two Cations and Two Anions.

The following radicals may be given:

BASIC RADICALS: (from amongst) Pb^{2+} , Bi^{3+} , Cd^{2+} , Al^{3+} , Zn^{2+} , Mn^{2+} , Ba^{2+} , Sr^{2+} , Ca^{2+} , Mg^{2+} , Na^+ , K^+ , and NH_4^+ .

ACID RADICALS: (from amongst) CO_3^{2-} , HCO_3^- , SO_3^{2-} , S^{2-} , NO_2^- , F^- , Cl^- , Br^- , I^- , NO_3^- , SO_4^{2-} , BO_3^{3-} , PO_4^{3-} .

Experiment A: Preliminary Tests for acid and basic radicals in given samples.

Experiment B: Wet tests for Acid and Basic radicals in given samples.

Experiment C: Confirmatory tests.

Note:

1. At least 10 unknown samples are to be analyzed by each student during the laboratory session.
2. The students have to write the equation and proper explanation wherever necessary.

THIRD SEMESTER - PRACTICALS (3 HOURS PER WEEK)

PAPER – III: Organic Qualitative Analysis

Qualitative analysis of Organic compounds [Monofunctional group]

The following compounds may be given:

1. Urea
2. Oxalic acid
3. Aniline
4. o-Cresol
5. Benzoic acid
6. Benzaldehyde
7. Acetophenone
8. Chlorobenzene
9. Benzamide
10. Nitrobenzene
11. Toluene

Note: A minimum of EIGHT experiments must be performed and recorded.

Chemical equations have to be discussed for all tests.

FOURTH SEMESTER – PRACTICALS (3 HOURS PER WEEK)

PAPER – IV: Chemistry Practicals - IV

1. Determination of density using specific gravity bottle and viscosity of the given liquid by using Ostwald's viscometer.
2. Determination of density and surface tension of the given liquid by drop weight method using stalagmometer.
3. Determination of molecular weight of non volatile solute by Walker-Lumsden method.
4. Determination of percentage of given electrolyte in phenol water system by miscibility temperature method.
5. Determination of percentage of given binary mixture (Glycerol-water) by viscosity method.
6. Determination of rate constant of Fe^{3+} catalyzed decomposition of H_2O_2 .
7. Determination of rate constant of saponification of ethyl acetate.
8. Determination of critical solution temperature of phenol water system.
9. Determination of transition temperature of given hydrate salt ($\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$).
10. Identification of the given amino acid by paper chromatography.
11. Determination of rate constant of inversion of cane sugar by polarimeter method.

Note: A minimum of EIGHT experiments must be performed and recorded.

FIFTH SEMESTER - PRACTICALS (3 HOURS PER WEEK)

PAPER – V: Gravimetric Analysis

1. Estimation of Barium (from barium chloride solution) as Barium sulphate.
2. Estimation of Iron (from Mohr's salt solution) as Iron oxide.
3. Estimation of Aluminium (from potash alum solution) as Aluminium oxide.
4. Estimation of Nickel (from Nickel ammonium sulphate solution) as Nickel dimethylglyoximate.
5. Estimation of Copper (from copper sulphate solution) as Cuprous thiocyanate.
6. Estimation of Zinc (from zinc sulphate solution) as Zinc oxinate..
7. Estimation of sulphate (from barium chloride solution) as Barium sulphate.
8. Estimation of Magnesium (from magnesium sulphate solution) as **Magnesium oxinate.**

Note: All the above experiments must be performed and recorded.

V SEMESTER – PRACTICALS (3 HOURS PER WEEK)

PAPER – VI: Organic preparation and estimation

Part-A: Preparation

1. Preparation of acetanilide from aniline.
2. Preparation of m-dinitro benzene from nitrobenzene. (Example for nitration reaction)
3. Preparation of benzoic acid from benzaldehyde. (Example for oxidation reaction)
4. Preparation of p-bromo acetanilide from acetanilide. (Example for bromination reaction)
5. Preparation of azo dye from aniline. (Example for coupling reaction)

Note: A minimum of FOUR experiments must be performed and recorded.

Part-B: Estimation

1. Determination of Phenol.
2. Determination of Aniline.
3. Determination of Glycine.
4. Determination of Citric acid.
5. Determination of Amide.

Note: A minimum of FOUR experiments must be performed and recorded.

SIXTH SEMESTER - PRACTICALS (3 HOURS PER WEEK)

PAPER – VII: Chemistry Practicals - VII

Part-A

1. Determination of percentage composition of a binary mixture of organic liquids by using Abbe's Refractometer
2. Determination of rate constant of inversion of cane sugar by Polarimeter.
3. Determination of cell constant (0.1N KCl solution to be prepared by students) and determine the equivalent conductance of the given electrolyte solution by using conductivity bridge.
4. Determination of cell constant (0.1N KCl solution to be prepared by students) and determine the equivalent conductance at infinite dilution for weak electrolyte of given solution.
5. Potentiometric titration of Mohr's salt solution v/s Potassium dichromate/Potassium permanganate solution
6. Potentiometric titration of Hydrochloric acid v/s Sodium hydroxide.

Note: A minimum of FOUR experiments must be performed and recorded.

Part-B

1. Conductometric titration of Sodium hydroxide vs Hydrochloric acid
2. Conductometric titration of Mixture of weak acid and strong acid vs Sodium hydroxide.
3. Determine the pH of mixture of acetic acid and sodium acetate at different concentrations and determination of dissociation constant of acid by using pH meter.
4. Estimation of Cu(II) in the given solution by colorimetric method.
5. Estimation of Fe(III) in the given solution by colorimetric method.
6. Conductometric titration of tertiary mixture of CuSO_4 + Acetic acid + HCl using NaOH solution.

Note: A minimum of FOUR experiments must be performed and recorded.

SIXTH SEMESTER – PRACTICALS (3 HOURS PER WEEK)

PAPER – VIII: Inorganic Complex Preparation and Estimation

Part - A: Preparation and estimation

1. Preparation of chloropentamminecobalt(III) chloride.
2. Preparation of nitropentamine cobalt(III) chloride
3. Preparation of tetraamminecopper(II) sulphate.
4. Preparation of potassium trisoxalato ferrate(III) hydrate.
5. Preparation of trithiourea zinc(II) complex.
6. Preparation of Hexamminenickel(II)chloride complex.

Note: A minimum of FOUR experiments must be performed and recorded.

Part - B: Ore Analysis

1. Estimation of calcium carbonate in limestone by oxalate method.
2. Estimation of amount of iron present in haematite ore.
3. Estimation of MnO_2 present in the given pyrolusite ore.
4. Estimation of amount of nitrite present in sodium nitrite ore solution.
5. Estimation of amount of magnesium present in gypsum ore.
6. Estimation of amount of chromium present in chromite ore.

Note: A minimum of FOUR experiments must be performed and recorded.

Subject : ELECTRONICS

Semester : Ist

Paper : Ist

Title : Electrical components & Circuit theory

No of hours : 60

No of hours per week : 4

Max marks:50

Unit 1: Passive Components & Network analysis: Resistors, Capacitors, Inductors: Specification, types, color Codes. Transformer: Specification, Types, working, features, transformation ratio, transformer losses. Network analysis and theorems: Ideal voltage and current sources, KCL, KVL, mesh analysis, superposition theorem, thevenin' s theorem, norton' s theorem, Maximum power transfer theorem.

Unit 2: AC Transient Analysis: AC fundamentals, Definition of instantaneous, peak, peak to peak, root mean square and average values. voltage-current relationship in resistor, inductor and capacitor- Phasor, complex impedance. power in AC circuits: instantaneous power, average power, reactive power, power factor. Sinusoidal circuit analysis for RL, RC and RLC series circuits. Resonance in series and parallel RLC circuits, frequency response of series and parallel RLC circuits.

Unit 3: DC Transient Analysis : Study the charging & discharging of capacitor through resistor- Expression for instantaneous voltage across the capacitor, Growth & Decay of current in series RL circuit, Energy stored in Inductor & capacitor. RC Integrator & Differentiator circuit. Frequency filter: low pass, high pass, band pass and band stop.

Unit 4: Measuring Instruments & Sensors: Description of physical parameters, measurement system block diagram. Measurement characteristics, accuracy, precision, sensitivity, linearity, resolution. Comparison of Analog & digital meters (DMM).
CRO: Principle, construction, working, application & advantages.
Sensors: need, definition, types, classification, principle, input/output Parameters, construction, working & specification of thermal, electrical & mechanical sensors.

Subject : ELECTRONICS PRACTICAL

Semester : Ist

Paper : Ist

Title : Electrical Lab

No of hours per week : 3

Max marks: 40

1. Verification of Superposition theorem
2. Verification of Thevenin's theorem
3. Verification of Norton's theorem
4. Verification of Maximum power transfer theorem.
5. Impedance in series RC circuits
6. Impedance in parallel RC circuits
7. Phase measurement using CRO
8. Series LRC circuits :
9. Parallel LRC circuits determination of frequency of AC mains.
10. Voltage during Charging & discharging of a Capacitor
11. Current flow during Charging & discharging of a Capacitor
12. Energy stored during charging of a Capacitor.

Reference Books:

1. Applied Electronics- R. S. Sedha- S Chand &Co
2. Principles of Electronics- V.K. Mehta and Rohit Mehta - S Chand & Co
3. Basic Electronics- B.L. Theraja - S Chand & Co
4. Electronic Principles - Malvino
5. Electronic Devices & Circuits -Sanjeev Gupta
6. Basic electronics and linear circuits - N.N. Bhargava, D.C.Kulsheshtha and S.C.Gupta - Tata McGraw Hill - 1987.

Subject : ELECTRONICS

Semester : 2nd

Paper : 2nd

Title : Semi conductor devices & its Applications

No of hours : 60

No of hours per week : 4

Max marks: 50

Unit 1: Semiconductor Basics : Structure of solids - Conductivity of solids, energy bands, bonding in solids. semi conductors - types of semiconductors - P & N Type, charge carriers, charge concentration, Fermi level, temperature dependence of carrier concentration, mobility, conductivity, energy gap, drift and diffusion current. pn junction diode zener diode, tunnel diode- construction, working & Characteristics.

Unit 2: Rectifier & filter, power supply: Theory of Half wave & Full wave rectifier, expression for the efficiency, ripple factor. Comparison among the rectifiers. Ripple Filters- Types, construction & working of different types. Power Supply: Voltage regulator using Zener diode, Clippers & clampers : Types, construction & working.

Unit 3: Bipolar Junction Transistors: Types, construction, working, different configuration, Characteristics of transistor in CE mode, parameter of transistor & their relations. FETs: Types, construction, working & characteristics.

Unit 4: Amplification action of Transistor: Introduction to amplifier, Need for biasing, types Transistor biasing- Dc load line, factors affecting the operating point, stability analysis, description of CE amplifier, AC load line. Analysis of CE amplifier – graphical analysis & approximate model analysis. Emitter follower & Darlington pairs – circuit operation & application.

Subject : ELECTRONICS PRACTICAL

Semester : 2nd

Paper : 2nd

Title : Analog Electronics lab1

No of hours per week : 3

Max marks: 40

1. PN diode characteristics
2. Zener diode characteristics
3. Half & center tapped full wave rectifier
4. Bridge rectifier
5. Zener as voltage regulator
6. Clippers & Clampers.
7. Transistor Characteristics
8. Transistor CE Amplifier
9. DC load Line.
10. Emitter follower.
11. FET Characteristics
12. MOS FET Characteristics

Reference Books:

1. Applied Electronics- R. S. Sedha- S Chand &Co
2. Principles of Electronics- V.K. Mehta and Rohit Mehta – S Chand & Co
3. Basic Electronics- B.L. Theraja – S Chand & Co
4. Electronic devices and circuits – G.J.Mithal, Khana publishers, New Delhi
5. A Text Book of Applied Electronics – R. S. Sedha, S. Chand & Co.
6. Electronic Principles – Malvino
7. Electronic Devices & Circuits –Sanjeev Gupta
8. Basic electronics and linear circuits - N.N. Bhargava, D.C.Kulsheshtha and S.C. Gupta - Tata McGraw Hill – 1987.

Subject : ELECTRONICS

Semester : 3rd

Paper : 3rd

**Title : Opto Electronics devices, Amplifier
& power electronics.**

No of hours : 60

No of hours per week : 4

Max marks: 50

Unit 1 : Opto Electronics devices: Photo Electric effect & Laws, conductivity, Photo emissive, photo voltaic cells, Photo-diode, Photo-transistor, Photo detector, LED, LCD, LDR, Opto-coupler, Photo multiplier & solar cell: construction, characteristic and applications.

Unit 2 : Amplifiers: Power Amplifier: classification, performance quantifies of power amplifier, circuit operation of different type, expression of efficiency comparison, Application.
Tuned Amplifier: Types, circuit Operation, Frequency response, application.
Feed back Amplifier: Concept of feedback, different feed back techniques, expression for transfer gain, loop gain. comparison between the types.
Multistage Amplifier: Need, Methods of coupling- circuit analysis, Frequency response, Application.

Unit 3 : Oscillators: Oscillators : Barkhausen criteria for sustained oscillation, derivation of general condition for oscillation, classification- circuit operation, expression for frequency of oscillation, comparisons, applications.
Multivibrators: Types, circuit operation, expression for frequency, comparisons & applications.

Unit 4 : Power electronics: UJT, SCR, Diac, Triac : construction, operation, Applications.

Subject : ELECTRONICS PRACTICAL

Semester : 3rd

Paper : 3rd

Title : Analog Electronics lab 2

No of hours per week : 3

Max marks: 40

1. Opto-electronic Devices – Photo diode, photo transistor, LDR Characteristics.
 2. Opto-electronic Devices – LED, Opto-coupler Characteristics.
 3. RC coupled Amplifier.
 4. Class A Audio power Amplifier.
 5. Tuned Amplifier.
 6. Feed back Amplifier.
 7. Collpitts / Hartely Oscillator.
 8. RC phase shift Oscillator.
 9. Wein Bridge Oscillator.
 10. Astable Multivibrator
 11. UJT Characteristics
 12. SCR Characteristics
-

Reference Books:

1. Applied Electronics– R. S. Sedha– S Chand &Co
2. Principles of Electronics– V. K. Mehta and Rohit Mehta – S Chand & Co
3. Basic Electronics– B. L. Theraja – S Chand & Co
4. Electronic devices and circuits – G. J. Mithal, Khana publishers, New Delhi
5. A Text Book of Applied Electronics – R. S. Sedha, S. Chand & Co.
6. Power Electronics –By M. D. Singh and K. B. Khanchandani, TMH Pub. Co. Ltd.
7. Thyristors Theory and Applications (Second edition)–R. K. Sugandhi and K. K. Sugandhi Wiley Eastern Ltd.

Subject : ELECTRONICS

Semester : 4th

Paper : 4th

Title : Differential amplifier & Linear ICs

No of hours : 60

No of hours per week : 4

Max marks: 50

Unit 1 : Differential amplifier & OPAMP: Differential amplifier: Introduction, different configuration, detailed discussion of dual input Balanced output differential amplifier– Expression for output voltage, transfer characteristic–using DC and AC equivalent circuits, differential and common mode operation, CMRR.

OPAMP: Introduction, block diagram, symbol, characteristics of an ideal opamp. Parameters of OPAMP, Inverting & non inverting amplifier with feedback–expression for closed loop voltage gain, voltage follower circuit.

Unit 2: OPAMP Applications: Current to voltage converter, Inverter/phase changer, differential amplifier, Adder, subtractor, Multiplier, integrator, Differentiator: circuit operation, derivation.

Frequency filters using op amp: Low pass, High pass, Band pass, Band stop, All pass filters: circuit operation, derivation for cutoff frequency.

Unit 3: Comparator, signal generator & voltage regulator: Basic comparator, Characteristics, comparator, zero crossing detectors, circuits Operation using OPAMP, Application.

Introduction to Timer (555): Block diagram, Monostable, Astable Multivibrator, Schmitt trigger, Voltage to frequency, and frequency to voltage converter.

Basic circuit configuration and characteristics of voltage regulators: Basic blocks of linear voltage regulator– three terminals fixed regulators (78XX and 79XX), variable voltage Regulators (723), typical circuits & Applications.

Unit 4 : IC Fabrication & VLSI: Introduction, classification of ICs, scale of Integration, Advantages & disadvantages over discrete components.

Thick & Thin film technology: Features, Advantages and applications.

Monolithic IC process, fabrication of resistors, capacitors, diodes,

Transistor. VLSI: Introduction to VLSI Systems, evolution of VLSI, design hierarchy, CMOS fabrication technology and design rules.

Subject : ELECTRONICS PRACTICAL

Semester : 4th

Paper : 4th

Title : Linear IC lab

No of hours per week : 3

Max marks : 40

1. Differential Amplifier using transistor.
2. Determination of OPAMP parameters.
3. Determine the Slew rate & CMRR of practical OPAMP.
4. OPAMP as Inverting & Non-inverting amplifier
5. OPAMP as differential amplifier
6. OPAMP as adder & subtractor
7. OPAMP as Integrator & Differentiator.
8. OPAMP as voltage to current & current to voltage converter.
9. OPAMP as Low pass filter High pass filter
10. OPAMP as Band pass filter
11. OPAMP as Band stop filter
12. OPAMP's frequency response.

Reference Books:

1. Op-Amps and Linear IC' s - R. A. Gayakwad, , Pearson Education (2003)
2. Basic Electronics- B.L.Theraja - S Chand & Co
3. Electronic devices and circuits - G. J. Mithal, Khana publishers, New Delhi
4. Integrated Circuits - Deboo and Burrous - McGraw Hill.
5. Linear ICs - D. Roy Choudhury, Sherif, Jain - Wiley Eastern.
6. Integrated Circuits - K.R. Botkar - Khanna Publishers.

Subject : ELECTRONICS

Semester : 5th

Paper : 5th

Title : Digital Electronics

No of hours : 45

No of hours per week : 3

Max marks: 50

Unit 1: Number system, Logic gates, Logic design: Number system–types, inter conversion, 10^s and 2^s complement. Information codes. Logic System: Boolean algebra, proof of Boolean identities using Boolean Laws. De Morgan’s theorems. Logic Gates:– Basic gates, universal gates, X-OR gates, X-NOR gates. Combinational logic design, min term and max term, SOP and POS, inter conversion. simplifying the Boolean expressions using Boolean Laws & K-Map, Quine McClusky method.

Unit 2: Combinational logic circuit: Adders, subtractor, encoder, decoder, multiplexer, de multiplexer, parity generator & checker– design concept, & circuit implementation using gates.

Unit 3: Sequential circuit: flip flop: latch, RS flip flop, JK flip flop, D flip flop, T flip flop, master slave flip flop– working & application. Counter: Ripple counters– Design of 4 bit asynchronous counter, decade counter & up-down counter – working with timing diagram. Synchronous counter transition table for J-K Flip-Flop and designing of 3 bit synchronous counter. Comparison of ripple and synchronous counter, Ring counter, Johnson counter. Shift register: Types of shift registers, working & application.

Subject : ELECTRONICS PRACTICAL

Semester : 5th

Paper : 5th

Title : Digital lab

No of hours per week : 3

Max marks : 40

1. Basic gates using discrete component
 2. Realization of AND, OR, NOT, NOR, XOR, XNOR using IC 7400
 3. Realization of Half / Full adder using basic and universal gates.
 4. Realization of Half / Full subtractor using basic and universal gates.
 5. Parallel adder using IC 7483
 6. Encoder and Decoder using IC 74147 and IC 7447 respectively
 7. Truth table verification of all flip flop
 8. Realization of Multiplexer/ De-Multiplexer using logic gates and appropriate IC
 9. Synchronous mode using IC 7476, IC7490 & IC 74193
 10. Ring counter
 11. Realization of 4-bit Shift Register using IC 7474 , IC 7476 & IC 74175
 12. Code converter
-

Reference Books:

1. Modern Digital Electronics – R.P. Jain, 2/e, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
2. Digital Principles and Applications – A.P.Malvino & D.P.Leach, Tata McGraw Hill Publishing Co. Ltd.
3. Digital Fundamentals – T.L. Floyd, Pearson Education, 8/e.
4. Modern Digital electronics : R.P. Jain, TataMcGraw Hill 1997
5. Computer System Aaraachitecture, 2nd Edition, M. Marris mano, Prentice Hall.

Subject : ELECTRONICS

Semester : 5th

Paper : 6th

Title : Analog & digital communication

No of hours : 45

No of hours per week : 3

Max marks : 50

Unit 1: Amplitude modulation : Radio communication: Elements of communication system, modes of propagation of radio waves, Need for modulation – types. Amplitude modulation– mathematical expression of AM wave, frequency spectrum, bandwidth, modulation index, modulation by several sine waves, power relations. Modulator – collector modulator with theory SSB – theory of balanced modulator, suppression of side band by filter method. AM transmitter – block diagram. Demodulators– principle, qualities of good receiver, linear diode detector. AM broadcast receiver– principles, working, super heterodyne receiver. IF– factors governing choice of IF, image frequency and image frequency rejection.

Unit 2 : Frequency modulation: mathematical representation of FM wave, Frequency spectrum, band width considerations, generation of FM – theory of basic reactance modulator , FM transmitter – block diagram. FM demodulation – principle, balanced slope detector – Foster Seeley discriminator. Pre-emphasis and De-emphasis, Block diagram of FM receiver and its working. comparison of AM and FM

Unit 3 : Digital communication: Pulse modulation systems: Sampling theorem, Pulse Amplitude Modulation, Pulse Width Modulation, Pulse Position Modulation, Pulse Code Modulation, Differential Pulse Code Modulation, Delta Modulation, – theory, generation & comparison. Digital Carrier Modulation Techniques: Amplitude Shift Keying, Frequency Shift Keying, Phase Shift Keying (PSK). Multiplexing: Frequency Division Multiplexing, Time Division multiplexing: theory, generation & comparison.

Subject : ELECTRONICS PRACTICAL

Semester : 5th

Paper : 6th

Title : Communication lab

No of hours per week : 3

Max marks : 40

1. Amplitude modulator and demodulator using transistor
 2. IF amplifier
 3. Class – C tuned amplifier.
 4. Pre-emphasis and De-emphasis circuits using OPAMP.
 5. Frequency mixer.
 6. Astable multivibrator using IC 555
 7. Mono stable multivibrator using IC 555
 8. Schmitt trigger using IC 555
 9. Phase shifter using IC 741
 10. variable voltage regulator using IC 723
 11. Saw tooth generator
 12. triangular wave generator
-

Reference Books:

1. Electronic Communication Systems – George Kennedy, McGraw Hill Book Company,
2. Communication System – Roddy & Coolen, 4/e, Pearson Education, 2005.
3. Principles of Communication Engineering – Anok Singh, Sathyaprakasam Publications, 2004.
4. Electronic Communications – Sanjeev Gupta – Khanna Publications

Subject : ELECTRONICS

Semester : 6th

Paper : 7th

Title : Micro controller & Application

No of hours : 45

No of hours per week : 3

Max marks : 50

Unit 1: Microcontroller architecture: comparison between microprocessor and Microcontrollers, 8051 Microcontroller, architecture, 8051 oscillator and clocks, program counter and data pointer, registers, flags, PSW. internal memory, internal RAM & external memory. stack, special function registers. I/O pins, ports.

Unit 2: Instruction set & Programming: Introduction – addressing modes, byte level logical operations, bit level logical operations, rotate and swap operation simple programs.

Arithmetic operations : Introduction, incrementing and decrementing, addition, subtraction, multiplication, division – simple programs.

Instruction Set : introduction, external data move, push & pop, opcodes, Data exchanges – simple programs.

Jump and Call Instruction: Introduction, jump and call program.

Unit 3: Timer / counter, interrupts, & interfacing: counter / timer interrupts, timing timer modes of operation, counting.

Serial data input / Output: serial data interrupt, data transmission, data reception, serial data transmission modes.

Interrupts: timer flag interrupt, serial port interrupt, external interrupt reset, interrupt control, interrupt priority, interrupt destination.

Interfacing: description of 8255, interfacing 8051 to LED, seven segment & DAC.

Subject : ELECTRONICS PRACTICAL

Semester : 6th

Paper : 7th

Title : Micro controller application lab

No of hours per week : 3

Max marks : 40

1. Data transfer: exchange, block move.
 2. Arithmetic operation: Addition, subtraction
 3. Arithmetic operation: Multiplication
 4. Arithmetic operation: division
 5. 1's and 2's complement of 8 bit number/16 bit numbers.
 6. Two programs on logical operations.
 7. Program to convert Binary number to equivalent Gray number.
 8. Program to unpack the packed BCD number.
 9. Smallest of two numbers
 10. Largest of two numbers
 11. Interfacing of LCD
 12. Interfacing the DAC
-

Reference Books:

1. Kenneth. J. Ayala, "The 8051 Microcontroller Architecture, Programming and Application" II Edition.
2. Mohammed Ali Maszidi, "The 8051 Microcontroller and Embedded - system"
3. 8051 Microcontroller: Hardware, Software and Applications- V. Udayshankara, M. S. Mulikarjun Swami-McGraw Hill.
4. Microprocessor, microcontroller & applications- U. S. Shah (Tech-Max Pune).
5. Microcontroller (Theory and Applications) - Ajay V. Deshmukh- McGraw Hill.
6. Microcontroller & Applications-A. P. Godse, Technical Publications, Pune

Subject : ELECTRONICS

Semester : 6th

Paper : 8th

Title : Advanced communication system

No of hours : 45

No of hours per week : 3

Max marks : 50

Unit 1: Television: Requirements of TV system. Block diagram of monochrome T.V transmitter and receiver. Scanning Techniques: progressive scanning and interlaced scanning, Composite Video Signal. calculation of video bandwidth, vestigial side band transmission. Camera tube: principle, construction and working of Image orthicon & Vidicon Camera Tube, Construction and working of monochrome picture tube. Basics of colour TV

Unit 2 : Micro wave, Radar : Introduction – Frequency spectrum, Micro wave bands, Applications of microwaves in different fields. Guided waves, wave guides– Introduction, rectangular wave guides, TE and TM waves, Transverse electromagnetic waves. Microwave Semiconductor devices – Schottky diodes, Point contact diodes, Varactor diodes, IMPATT, TRAPATT, Gunn diode, Applications.
Radar: Radar: Radar Equation, Radar Block Diagram and Operation, Radar Equation, Radar Frequencies, Applications of Radar, The Origins of Radar Prediction of Range, Minimum Detectable Signal, Receiver Noise, Radar altimeters. Types of Radar: CW radar, MTI and Pulse Doppler Radar: Introduction, working, Applications & limitations. Display units: A-Scope & Plane Position indicator.

Unit 3 : Satellite & Mobile communications: Need for Artificial satellite, types Satellite launching Vehicle & satellite, applications.
Geo-Synchronous Satellite: expression for orbital velocity, Transponders, uplink and downlink frequency, Block diagram of satellite electronic system and earth station.
Mobile Communication: Introduction to Cellular Mobile Systems– Mobility, need, advantages and limitations. A basic cellular system, performance criteria, uniqueness of mobile radio environment, operation of cellular systems, planning a cellular system, overview of generations of cellular

systems. Elements of Cellular Radio Systems Design and Interference– General description of the problem, Cellular Concept: cellular system Architecture– cells, clusters, frequency reuse channels, channel assignment, hand off, co-channel interference reduction factor, cell splitting, consideration of the components of cellular systems,

Reference Books:

1. Monochrome and Colour Television – R.R. Gulati, 1/e, New Age International Publishers.
2. Electronic Communication Systems – George Kennedy, McGraw Hill Book Company,
3. Communication System – Roddy & Coolen, 4/e, Pearson Education, 2005.
4. Principles of Communication Engineering – Anok Singh, Sathyaprakasam Publications, 2004.
5. Microwave Engineering–Sanjeeva and Gupta
6. Optical Fibers and Fiber Optic Communication Systems, S.K. Sarkar, S.Chand and Company Ltd., New Delhi.
7. Communication Engineering, J.S. Katre, Technova Educational Publications, Pune.
8. Mobile Cellular Telecommunication – William CY Lee – TMH – II Edition.

Subject : ELECTRONICS PRACTICAL

Semester : 6th

Paper : 8th

Title : Project

No of hours per week : 3

Max marks : 40

- Useful projects should be produced.
- Projects must include electronic hardware and the demonstration is compulsory. Project work shall be completed batch wise.
- The batch shall consist a maximum of 4 candidates.
- Project Viva-Voce examination shall be conducted batch wise.

**BACHELOR OF SCIENCE
DEGREE COURSE
B.Sc. ELECTRONICS
(With effect from 2013-2014)**

The Course of Study and the Scheme of Examinations

Sem	Paper	Title of the paper	Ins Hrs/ week	Exam hrs	IA	Uni Exam	Total
I	I	Electrical components & Circuit theory	4	3	10	50	100
	I	Electrical Lab	3	3	-	40	
II	II	Semi conductor devices & its Applications	4	3	10	50	100
	II	Analog Electronics lab1	3	3	-	40	
III	III	Opto Electronics devices, Amplifier & power Electronics	4	3	10	50	100
	III	Analog Electronics lab1	3	3	-	40	
IV	IV	Differential amplifier& Liner ICs	4	3	10	50	100
	IV	Linear IC lab	3	3	-	40	
V	V	Digital Electronics	4	3	10	50	100
	V	Digital lab	3	3	-	40	
	VI	Analog & digital Communication	3	3	10	50	100
	VI	Communication lab	3	3	-	40	
VI	VII	Micro controller & its Application	3	3	10	50	100
	VII	Micro controller Application Lab	3	3	-	40	
	VIII	Advanced communication system	3	3	10	50	100
	VIII	Project	3	3	-	40	

Practical: Scheme of valuation

Max marks: 40

Sl.No	Particular	Marks allotted
01	Writing the circuit diagram with relevant marking	03
02	Description about the experiment	03
03	Writing the Neat tabular column, ideal graph (if any)	03
04	Formulas & explanation of each terms with their units	02
05	Handling the instruments & connection	04
06	Observation, trials	08
07	Calculation	05
08	Accuracy & neatness	02
09	Viva	05
10	Record	05

Section	Types	Question to be given	Question to be Answered	Marks for each question	Total marks	Unit 1	Unit 2	Unit 3	Unit 4
A	Objective type	5	4	1	4	1	1	1	1
B	Short answer questions	5	4	2	8	1	1	1	1
C	Medium answer questions	5	4	4	16	1	1	1	1
D	Long answer questions	5	4	6	24	1	1	1	1
Total Marks				50	50	12	12	12	12



KUVEMPU UNIVERSITY

CURRICULUM IN ZOOLOGY FOR B.Sc. (UG)

B.Sc. DEGREE SEMESTER SYLLABUS (Effective from 2018-19 onwards)

		Theory			Practical		
Year	Sem	Paper	Tit le	Teaching Hrs	Paper	Title	Teaching Hrs
I	1	1	Diversity and Functional Anatomy of Non-Chordates	60 hrs	1	Diversity and Functional Anatomy of Non-Chordates	15 x3 = 45hrs
	2	2	Diversity and Functional Anatomy of Chordates	60 hrs	2	Diversity and Functional Anatomy of Chordates	15 x3 = 45hrs
II	3	3	Ecology, Ethology and Biodiversity	60 hrs	3	Ecology, Ethology and Biodiversity	15 x3 = 45hrs
	4	4	Animal Physiology, Biochemistry and Biostatistics	60 hrs	4	Animal Physiology, Biochemistry and Biostatistics	15 x3 = 45hrs
III	5	5.1	Cell Biology, Microbiology and Immunology	45 hrs	5	Cell Biology, Microbiology and Immunology	15 x3 = 45hrs
		5.2	Applied Zoology, Histology and Bio-techniques	45 hrs	6	Applied Zoology, Histology and Bio-techniques	15 x3 = 45hrs
	6	6.1	Genetics, Molecular Biology and Evolution	45 hrs	7	Genetics, Molecular Biology and Evolution	15 x3 = 45hrs
		6.2	Developmental Biology and Animal Biotechnology	45 hrs	8	Developmental Biology and Animal Biotechnology	15 x3 = 45hrs

Teaching hours: I & II year 4 hours theory and 3 hrs Practical / week. III year 3+3=6 hrs theory and 3+3=6 hours Practical / week.

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) I SEMESTER

Theory: Paper 1 : Diversity and Functional Anatomy of Non-Chordates (60 HRS.)

This paper deals with the diversity of Non-chordates. This paper will help students to understand the diversity of various species among non-chordates including organization of animal body architecture, principles of classification, general characteristics of different phyla along with specific type study.

Units	TITLE	hrs
1	<p>Introduction</p> <p>Animal Architecture: i) Body symmetry- types – spherical symmetry, radial symmetry, biradial symmetry and bilateral symmetry. ii) Organization- the hierarchical organization of protoplasmic level, cellular level, tissue level and organ level of organization. iii) Germ layers- diploblastic and triploblastic condition. iv) Coelom- origin and types– acoelom, pseudocoelom, eucoelom (enterocoelom and schizocoelom). v) Metamerism- types – pseudometamerism, true metamerism. vi) Cephalization.</p> <p>Principles of animal classification: An outline classification of Animal kingdom. - binomial nomenclature; international rules of Zoological nomenclature (brief account); New trends in systematics: Numerical taxonomy (Phenetics), Cladistics (Phylogenetic systematics), Molecular systematics.</p>	7
2	<p>Phylum Protozoa: General characters, classification of the phylum up to classes with examples. Type study – structure, life history and pathogenicity of <i>Plasmodium vivax</i> Locomotion in Protozoa: Locomotory organelles and modes of locomotion, Reproduction in Protozoa</p>	6
3	<p>Phylum Porifera: General characters, classification of the phylum up to classes with examples. General study – Cell types, skeleton, canal system(Asconoid, Syconoid, Leuconoid and Rhagonoid types). Reproduction in sponges.</p>	5
4	<p>Origin of Metazoa: Blastea and Gastrea theories and Hadzi's theory</p>	2
5	<p>Phylum Coelenterata: General characters, classification of the phylum up to classes with examples. Type study – Obelia- Morphology & Life history. Coral and Coral reefs, types and importance of coral reefs. Polymorphism in coelenterata</p>	4
6	<p>Phylum Platyhelminthes: General characters, classification of the phylum up to classes with examples. Type study- <i>Taenia solium</i> - Structure, reproduction, life cycle and pathogenesis. Parasitic adaptations in helminthes.</p>	4
7	<p>Phylum Nematelminthes: General characters, classification up to classes with examples. Pathogenicity of <i>Ascaris</i> & <i>Wuchereria</i> Role of <i>Turbatrix aceti</i> (vinegar eels) and <i>Brachionus</i>.</p>	3
8	<p>Phylum Annelida: General characters, classification up to classes with examples. Type study – <i>Hirudinaria granulosa</i> – Morphology, Excretory, digestive and reproductive systems.</p>	3
9	<p>Phylum Arthropoda: General characters, classification up to classes with examples. Type study – <i>Penaeus</i> – appendages, concept of serial homology, digestive system, nervous system and Crustacean larvae: Nauplius, Zoea, cypris and mysis larval stages. Web building spiders, Structure and affinities of peripatus, Metamorphosis of insects. Economic importance of insects.</p>	10
10	<p>Phylum Mollusca: General characters, classification up to classes with examples. Type study – <i>Unio</i>– structure, shell structure, Reproduction and life cycle. General study – Shells in Mollusca. Torsion in Gastropoda, Diversity of Cephalopods-<i>Nautilus</i>, <i>Sepia</i> & <i>Octopus</i></p>	9
11	<p>Phylum Echinodermata: General characters, classification up to classes with examples. Type study: Star fish– Morphology, digestive and water vascular systems. <i>Bipinnaria</i> and <i>Auricularia</i> larvae.</p>	5
12	<p>Phylum Hemichordata: General characters Type study: <i>Balanoglossus</i> – Morphology and Affinities of Hemichordata</p>	2

B.Sc. ZOOLOGY PRACTICAL PAPER I

DIVERSITY AND FUNCTIONAL ANATOMY OF NON-CHORDATES

(15 practicals of 3 hrs, each = 45 hrs).

	Title	Pr
1	Introduction to practicals- Microscopy-Laboratory handling of Compound & dissection microscope and stereoscopic microscopes.	1
2	Protozoa: Study of permanent slides – Study of <i>Entamoeba</i> , <i>Euglena</i> , <i>Noctiluca</i> , <i>Blattidium</i> , and <i>Elphidium</i> Temporary slide preparation and observation of protozoan culture.(Amoeba,Euglena,Paramecium,vorticella,stentor) and soil protozoans	2
3	Porifera: Specimen study: <i>Sycon</i> , , <i>Hyalonema</i> , <i>Spongilla</i> . Permanent slides : spicules and gemmule. Temporary slide preparation and observation of spicules	1
3	Coelenterata Specimen study: Physalia, Aurelia , Gorgonia, Fungia, Metridium Permanent slides: study of T.S. of Hydra, Obelia colony,	1
4	Platyhelminthes & Nematelminthes Specimen study – Planaria, <i>Fasciola hepatica</i> , <i>Taenia solium</i> , <i>Schistosoma</i> <i>Ascaris lumbricoides</i> , <i>Ancylostoma duodenale</i> . T.S of Ascaris	1
5	Annelida Specimen study:Pheritema, Nereis, Sabella, Aphrodite, Hirudinaria granulose.	1
6	Arthropoda Specimen study: Penaeus, Sacculina, Scolopendra, Scorpion, Aranea, Lepisma, Gryllotalpa, Carausius, butterfly, Rhinoceros beetle,Cimex hemipterus (bed bug),wasp . Permanent slides: Mouth parts cockroach& Mosquito	2
7	Mollusca Specimen study: Chiton, Dentalium, Cypraea, Conus, Limnaea, Mytilus, Unio, Sepia, Octopus, Permanent slides: Glochidium larva, Shells of Xancus, cyprea, scallop, Nautilus and Cuttle bone.	2
8	Echinodermata Specimen study: Astropecten, Ophiothrix, Echinus, cucumaria, Antedon, Slides of Bipinnaria& Echinopluteus larvae, Aristotle lantern, Pedicellaria Hemichordata – Balanoglaossus, Slide of Tornaria larva	2
9	Demonstration of animations /model/pictures Mountings- Appendages of prawn, Mouth parts of Cockroach, mosquito, honey bee, Spiracles of cockroach(dead commercially available specimens)	2

B.Sc. Zoology Practical Paper 1
SCHEME OF PRACTICAL EXAMINATION

Duration : 3 Hrs.

Max. Marks : 40

- Q I.** Mounting :A- Make temporary preparation & comment . 3marks
(A- Protozoan culture/mouth parts of mosquito)
- B - Identify and comment 3 marks
(any one appendage of prawn, Identification & diagram 2 marks, description-1mark)
- Q II.** Identify, classify and comment with labeled diagram of **C , D,E,F, G, H, I &J**8X3=24marks
(Identification 1/2 mark; classification 1/2 mark; Labeled diagram 1 mark, Description 1 mark).
- Q III.** Viva Voce 05 marks
- Q IV.** Class records 05marks
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Suggested Readings:

1. Barnes R.D. 1968. Invertebrate Zoology, 2nd Edn. Saunders Philadelphia.
2. Barrington, E.J.W.1967. Invertebrate structure and function. Neelson, London.
3. Hymann, L.H. 1940-67. The Invertebrate, Vol. I-IV. Mc Graw- Hill, New York.
4. Marshall, A.J. and Williams, W.D. (Eds.). 1995. Text book of Zoology – Invertebrates, B.S. Publishers.
5. Russell-Hunter, W.D. 1968. A biology of lower Invertebrates. Macmillan Company, New York.
6. Russell-Hunter, W.D. 1969. Biology of higher Invertebrate. Macmillan Company, New York.
7. Sedgewick Volumes
8. Parker and Haswel Vol. I
9. R. L. Kotpal Volumes Invertebrates
10. A Manual of Zoology by EkambarnathIyer andVishwanathan
- 11.Ruppert and Barnes, R.D. (2006). Invertebrate Zoology, VIII Edition. Holt Saunders International Edition.
- 12.Invertebrate Structure and Function Paperback– 2012 by Barrington E J W(Author)
- 13.Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002).
- 14.Invertebrate Zoology - E. L. Jordan and Verma
- 15.Biology of Animals Vol-1- Ganguly, Sinha, Adhikari
16. Zoology for degree students- Dr. V.K. Agarwal
- 17.Anderson, D. T.: Invertebrate Zoology. 2e, 2001, Oxford Uty. Press
18. Integrated Principles of Zoology17thEdition(2016) Cleveland Hickman

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) II SEMESTER

THEORY: PAPER 2 : DIVERSITY AND FUNCTIONAL ANATOMY OF CHORDATES (60 Hours)

This paper deals with the diversity and anatomy of Chordates. This will help students to understand the diversity of various species among chordates. Students will learn general characteristics of different phyla from Protochordates to Mammalia along with specific type study. This paper also deals with comparative anatomy of vertebrates, and paleontological and evolutionary aspects.

Units	TITLE	hrs
1	Introduction: General characters of Chordates, classification up to classes, origin of chordates(Combined theory. E.J.W. Barrington (1965))	3
2	Protochordates: General characters of Sub-phylum Urochordata –Morphology of Ascidia, Ascidian tadpole and retrogressive metamorphosis. Distinctive features of Sub-phylum Cephalochordata –Amphioxus– Morphology, Structure of pharynx and feeding mechanism in <i>Branchiostoma</i> sp.	4
3	Subphylum Vertebrata: Division Agnatha – distinctive characters and classification upto classes. Cyclostomata – Petromyzon, Myxine general organization, Ammocoete larva and its significance.	2
5	Gnathostomata – General characters of PISCES, Chondrichthyes and Osteichthyes. Classification up to Classes. Type study : <i>Scoliodon</i> -Morphology, Digestive system, Respiratory system, Circulatory system, Central nervous system & Urinogenital system General study- Accessory respiratory structure in teleosts, Salient features of Dipnoi fishes.	8
4	Class Amphibia: General characters and classification of living Amphibians upto orders, with suitable examples. Paedomorphosis with special reference to Axolotl larva. Endemic anuran species of Western Ghats- <i>Nyctibatrachus</i> & <i>Nasikabatrachus</i> . Origin of tetrapod limbs.	5
5	Class Reptilia -General features and Classification up to order level. Snake venom, Poison apparatus of snakes and evolution of temporal fossae.	5
6	Class Aves – General characters and classification up to subclasses; distinctive features of Archaeornithes and Neornithes with reference to Paleognathae, Impennae and Neognathae with suitable examples; a brief account on forest, wetland and shore birds; adaptation to flight Beak and feet modifications in birds	8
7	Class Mammalia: – general characters and classification up to orders with examples; Distinctive features and distribution of Prototheria, Metatheria & Eutheria, Distinctive features of mammalian orders (Rodentia, Carnivora, Chiroptera, Cetacea, Proboscidea, Ungulata – Perissodactyla and Artiodactyla, and Primates –Platyrrhini and Catarrhini) with examples. Dentition in Mammals- Types, Dental formula of dog, cow and man, Type study – Rabbit – Morphology, digestive, respiratory, Central Nervous System, cranial nerves, urinogenital systems.	9
8	Comparative anatomy of vertebrates: – vertebrate integument and its derivatives Evolutionary trends in the structure of Heart, Brain, and Kidney of Shark, frog, Lizard, Pigeon and Rabbit.	10
9	Paleontology : An account of fossils, dating of fossils, conservation methods of fossils. Paleontology of Dinosaurs: Tyrannosaurus, Brontosaurus, Pterosaurs, Ichthyosaurs and Archaeopteryx.	6

B.Sc. ZOOLOGY PRACTICAL PAPER II

DIVERSITY AND FUNCTIONAL ANATOMY OF CHORDATES

(15 practicals of 3 hours each = 45 Hours).

		Prs
1	Sub-phylum Urochordata – Herdmanja, Ascidian tadpole. Sub-phylum Cephalochordata – Amphioxus, T.S. of Amphioxus through Pharynx Cyclostomata – Petromyson, Myxine	1
2	Pisces – Scoliodon, Narcine, sting ray, Rhinobatus, Pristis, Hippocampus, Synaptura, Echenis, Mackerel, Anabas, Ophiocephalus, Antennarius, Dipnoi fishes Mounting & temporary slide preparation of placoid, ctenoid, cycloid scales and Ampullae of Lorenzini.	3
3	Amphibia – Ichthyophis, Bufo, Ambystoma and Axolotl Larva, Necturus, Alytes, <i>Nasikabatrachus sahyadrensis</i> .	1
4	Reptelia – Bungarus, Calotes, Chameleon, Draco, Naja naja, viper, Hydrophis, Python, Green snake, Hemidactylus, Alligator, Chelone mydas, Sphenodon, Phrynosoma. Fossil models- Tyrannosaurus, Brontosaurus, Pterosaurs, Ichthyosaurs and Archaeopteryx	3
5	Aves –Owl, Penguin, Ostrich, Wood pecker, Duck, Kingfisher, Pigeon, Gypus bengalensis (Bengal vulture), Psittacula (parrot), <i>Mulus migrans</i> (black winged kite), Bubulcus ibis .	2
6	Mammalia: Echidna, Ornithorhynchus, Macropus, Whale, Dolphin, Pteropus, Loris, Porcupine Macaca mulatta, Funambulus palmarum, Rhinoceros, <i>Axis axis</i> .	2
7	Comparative Anatomy or Vertebrates – Heart & Brain of Shark, Frog, Pigeon and Rabbit	1
8	Endoskeleton of Rabbit – Skull, vertebrae(atlas, axis & typical thoreacic), girdles and limb skeleton	1
9	Demonstration of systems by animations /model/pictures Rat– digestive, respiratory system and urinogenital system	1

B.Sc. Zoology Practical Paper 2
SCHEME OF PRACTICAL EXAMINATION

Duration : 3 Hrs.

Max. Marks : 40

Q I. Mounting : Make temporary preparation & comment on **A** (Scales)..... 03marks

Q II. Demonstrate **B** (Demonstration model/Endoskeleton)..... 03marks

Q III. Identify, classify and comment with labeled diagram of **C , D ,E,F , G,H, I & J**... 8x3=24marks
(Identification 1/2 mark; classification 1/2 mark; Labeled diagram 1 mark,
Description 1 mark.- 6 specimens, 1 comparative anatomy and 1 from Paleontology).

Q IV. Viva – Voce 05 marks

Q V. Class records 05marks

Suggested Readings:

1. Kardong, K.V. (2005) Vertebrates Comparative Anatomy, Function and evolution. IV Edition. McGrawHill Higher Education.
2. Kent, G.C. and Carr R.K. (2000). Comparative Anatomy of the Vertebrates. IX Edition. The McGraw-Hill Companies.
3. Young, J.Z. (2004). The life of vertebrates. III Edition. Oxford university press.
4. Bhaskaran, K. K. &Biju Kumar, A.: Textbook of Zoology (Chordata), Manjusha
- 5.Dhami, P. S. &Dhami, J. K.: Chordate Zoology. R. Chand & Co
- 6.EkambaranathaAyyar, M. &Ananthkrishnan, T. N.: A Manual of Zoology. Vol. II Part I & II
- 7.Harvey Pough, F. et al.: Vertebrate Life. Pearson EdnInc, Indian Edn
- 8.Jordan, E. L. &Verma, P. S.: Chordate Zoology S. Chand & Co, New Delhi
- 9.Kardong, K. V.: Vertebrates: Comparative Anatomy, Function and Evolution. 1995, WCB
- 10.Kotpal, R. L.: Modern Textbook of Zoology: Vertebrates. Rastogi
- 11.Romer, A. S: The Vertebrate Body; 1992 reprint, Vakils, Feffer& Simons, Bombay
- 12.Salim Ali: The Book of Indian Birds. BNHS, Oxford
13. Sedgewick Volumes
14. Parker and Haswel Vol. II
15. Comparative Anatomy by Romer

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) III SEMESTER

Theory: Paper III : Ecology, Ethology and Biodiversity (60 Hrs)

This paper deals with ecological components and systems, social organization of animals and diversity of animals. You will understand the principles, various processes and factors pertaining to ecosystem. In addition, you will understand the diversity of animals, their distribution and status with reference to India, and the behaviour of animals, their social organization, etc.

1	Concepts of Ecology & Environment: Definition-Environment, Ecology & Ecosystem; Environmental concepts - Atmosphere, Hydrosphere, Lithosphere & Biosphere, Environmental factors - Abiotic factors (Climate & Edaphic) & Biotic factors. Ecosystem :Concept, components, properties and functions; Ecosystem Processes - Energy flow in ecosystem and laws of thermodynamics, primary productivity, Biomass and productivity measurement, food chain, food web & ecological pyramids.	8
2	Animal relationships: Mutualism; commensalisms; parasitism; ammensalism; predation and competition with relevant examples	4
3	Community ecology : community structure; ecological determinants; ecological stratification; ecotone and edge effect; ecological niches; concepts ecological succession; climax community	3
4	Limiting Factors- basic concepts- Leibig's law of minimum, Shelford's law of tolerance, combined concept of limiting factors, Light and temperature as limiting factors.	2
5	Habitat Ecology : Marine habitat with zonation of sea; fresh water habitat: Lentic and Lotic systems; Terrestrial habitat - a brief account of forest and desert biomes; ecological adaptation of water and desert animals.	4
6	Population ecology: Properties of population- density, natality, mortality, age ,distribution, biotic - Potential- Allee's principle and Gause's principle, environmental resistance and carrying capacity, population growth forms, J and S shaped curves, emigration, immigration and migration, population fluctuation.	4
7	Environmental toxicology : Definition, scope and importance, Toxicants, Toxicity, LC50, LD50, classification of toxic agents. Biomagnification, Green house effects and global warming, sewage and sewage treatment.	4
8	Ecosystem monitoring - GIS (Graphic information system), role of remote sensing in ecology, (Global positioning system) GPS and its application and Ecosystem Modeling (Brief account only).	3
9	ETHOLOGY -Types of animal behavior with example :Innate behavior - reflexes, instinct, motivation; Learning behavior - habituation, imprinting, conditioned reflexes, insight learning; Aggression and territoriality. pheromones and behavior.	4
10	Social organization in animals : Honeybee (with communication),- Termites, Macaques and Elephant.	3
11	Animal migration : A) Migration in fishes - types, Anadromous and catadromous migration with salmon and Eel as examples. B) Migration in birds - Types/pattern, Methods of study, advantages, mechanics, preparation, orientation and navigation.	5
12	Courtship behavior :General principle, courtships of Three spined stickle back fish, Betta splendens, Frog, Peacock.	2
13	Parental care and Nesting behavior Parental care : In fishes - Hippocampus & Arius In amphibians - Ichthyophis&Rhacophorus In birds - Jacana & Penguin. Nesting behavior - in Waver bird, bower bird & tailor bird	2
14	Biological clock :Its nature, types and significance.Chronobiology in human health and diseases	2
15	BIODIVERSITY: Levels of biodiversity — genetic, species, ecosystem level; number of species in different groups of animals — global, and India, Values of Biodiversity & Biodiversity hotspot-Western Ghats. Threats to Biodiversity, Man-wild life conflict, Biodiversity conservation and management: Conservation strategies: <i>in situ</i> ; <i>ex-situ</i> , National parks, Sanctuaries and Biosphere reserves. Wild life conservation - Wildlife Protection Act, 1972, Role of Government and Non-Governmental organizations in wild life conservation. International efforts : Convention on Biological Diversity (CBD), International Union for Conservation of Nature and Natural Resources (IUCN), Convention for International Trade of endangered species, RAMSAR, Red data book , & endangered fauna of India.	10

B.Sc. ZOOLOGY PRACTICAL PAPER III

Ecology, Ethology and Biodiversity (15 practicals of 3 Hrs each)

Ecology:

10 practicals

1. pH of water samples
2. pH of soil samples
3. Estimation of dissolved CO₂ of water samples
4. Estimation of dissolved O₂ of water samples (Winkler's method)
5. Estimation of dissolved chlorides of water samples
6. Visit to a pond for the study of ecosystem: Collection and observation of planktons and consumers
7. Estimation of total hardness in water samples
8. Animal relationships :
 - for Mutualism – hermit crab and sea anemone; Trichonympha and termite
 - for commensalism – sucker fish and shark; Chaetopterus and crab
 - for parasitism – Ascaris, Saculina on crab, leech, mosquito
 - for predation- insect and frog; rat and snake
 - for ammensalism – Pencillium, Microcystis
 - for competition – squirrel and bird;

Ethology :

2 practicals

9. Eel, Ichthyophis, Male Hippocampus, Rhacophorus, termites and honey bee colony.
10. Nesting patterns of Tailor bird and Weaver bird.

Biodiversity:

3 practicals

11. Endangered fauna of India- Slender Loris, Pangolin, Python, Great Indian Bustard, Varanus, Gharial, Horn bill, Musk deer, Green sea turtle.
 12. Visit to wildlife sanctuary/safari/Nature camp (Field visit report in record)
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B.Sc. ZOOLOGY PRACTICAL PAPER III

SCHEME OF PRACTICAL EXAMINATION

Duration: 3 Hours

Max. Marks: 40

- Q 1. Identify and comment on the given specimens **A** and **B**. 2x3= 6 marks
(from Biodiversity)
- Q 2. Identify and comment on **C,D** (Ethology), **E&F**(Animal relationships) 4x3=12 marks
- Q 3.Estimate the quantity of dissolved CO₂/O₂/ Cl₂ / total hardness in given sample **G**.
(Principle-1mark, Requirement-1, Procedure-2, Observation and report -4 marks) 8 marks
- Q 4. Find the pH of the soil/water samples **H** and **I**. 2 marks
- Q 5. Identify and comment on **J** (pond ecosystem) 2 marks
- Q 6 Viva Voce. 5 marks
- Q 7. Class records 5 marks
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Suggested Readings:

1. Animal behaviour by Alock(2013)
2. Survival strategies by R. Gadakar(1997)
3. Introducton to Animal behaviour by Manning A. & M.S.Dawkins(2012)
4. Animal Behaviour by Robert A(1966) 17
5. Learning and instinct in animals by Thorpe(1956)
6. Ethology bu Reena Matur(1998)
7. Ecology by Charles J. Krebs(2009)
8. Fundamentals of Ecology by Eugene P. Odum(1953)
9. Elements of Ecology by Clarke(2015).

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) IV SEMESTER

THEORY : PAPER IV : ANIMAL PHYSIOLOGY, BIOCHEMISTRY AND BIOSTATISTICS (60 Hrs)

This paper teaches you the physiological processes, mechanisms which control the various physiological processes, various systems organization, endocrine glands and their hormonal secretions, Fundamentals of Biomolecules and their structure and functions. In addition, you will understand the essential statistical methods used in biology.

1	Osmoregulation in animals: Types, osmoregulation in shark, marine & fresh water teleosts, kangaroo rat and camel.	2
2	Digestion : Mechanism of digestion; chemical digestion and absorption of carbohydrates, proteins and lipids ;nervous and hormonal control of digestion balanced diet, nutritional disorders - PEM , deficiency of iron, iodine and calcium, lifestyle diseases, role of fibres 'and probiotics.	4
3	Respiration : external and internal respiration; respiratory pigments (Hb, haemocyanin, haemoerythrin); Physiology of respiration — exchange of gases transport of oxygen — oxygen dissociation curve, Bohr effect; transport of CO ₂ -chloride shift, respiratory quotient.	3
4	Circulation : types of circulation & hearts, Blood- Composition and functions, mechanism of blood clotting, disorders of blood clotting, anticoagulants, heartbeat, conducting system and pace maker, control of cardiac activity, electrocardiogram, angiogram, angioplasty.	4
5	Excretion: Nitrogen Excretion in animals, Ammonotelism, Ureotelism, Uricotelism, Guanotelism; Vertebrate Kidney - Function and regulation of vertebrate kidney; osmotic and Ionic Regulation.	3
6	Nervous System : Nerve Cells; Types, Structure of Multipolar neuro'ns ; Nerve Impulse ; Membrane Potential ; Action Potential, Conduction of nerve impulse ; Synaptic Transmission, Neurotransmitters, Neurodegenerative disorder ; Alzheimers diseases. Human endocrine glands - pituitary, thyroid, parathyroid, pancreas, adrenal, testes, ovaries and placenta ; hypothalamus and its stimulatory and inhibitory effects ; effects of hypo and hypersecretion of various hormones in human.	7
7	Muscle physiology : types of muscles ultra structure of Vetebrate Skeletal Muscles, Mechanism and control of Muscle Contraction. Properties of muscles :- Twitch, Tetanus, tone summation, all-or-none, principle and muscle fatigue,	4
8	Thermoregulation in animals: Effects of temperature, Acclimation and Acclimatization; Temperature Regulation in Poikilotherms and Homeotherms ;Hibernation, Aestivation, and daily torpor, Behavioural and Physiological Adjustments: Heat Production, Heat Loss, Heat Exchangers, Regulatory Mechanisms.	3
9	Sense organs : Classification of sense organs; structure and physiology of ear ; eye of mammal;	3
10	BIOCHEMISTRY : Carbohydrates :Structure and Biological importance: Monosaccharides, Disaccharides, Ploysaccharides and Glycoconjugates. Glycolysis, Krieb's Cycle, ETS, Gluconeogenesis, Glycogenesis. Lipids : Structure, classification and biological importance of saturated and unsaturated fatty acids, Tri-acylglycerols, Phospholipids, Glycolipids, Steroids. Proteins: Amino acids: Types and Biological importance of amino acids. Proteins: structure (Pri., Sec., ter., and quat.,) and Biological importance with examples, fibrous and globular proteins.	10
11	Enzymes : Definition, Classification (IUB system); Mechanism of enzyme action; specificity of enzymes; reversibility of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Mentenequation, Concept of Km and Vmax, enzyme inhibitors; A brief account of coenzymes cofactors; clinical importance of enzymes	4
12	Vitamins : Definition, Classification and Biological importance and deficiency Symptoms.	3
13	BIOSTATISTICS: Introduction, Variable and attribute; Sampling methods: Qualitative sample, Quantitative sample, Random sample, Non random samples. Arrangement of data; Frequency distribution. Graphical presentation of data: Line diagram; Bar diagram; Pie chart; Histogram. Measures of central tendency: Arithmetic mean; Mode; Median. Measures of dispersion: Variance; Standard deviation; Standard error of mean.	10

B.Sc. ZOOLOGY PRACTICAL PAPER IV

IV semester :Practical Paper 4: Physiology, Biochemistry and Biostatistics.

(15 practicals of 3 Hours each).

Physiology & Biochemistry:

- | | |
|---|--------------|
| 1. Total RBC count | 2 practicals |
| 2. Total WBC count | 1 practical |
| 3. Differential count of WBC | 1 practical |
| 4. Estimation of Hb | 1 practical |
| 5. Estimation of bleeding and clotting time | 1 practical |
| 6. Preparation of Haemin crystals | 1 practical |
| 7. Estimation of protein by colorimetric test | 1 practical |
| 8. Sense organs: Structure of Ear and Eye of Mammals | 1 practical |
| 9. Types of Muscles slides – simple, striated and cardiac | 1 practical |
| 10. Commenting on the vitamins present with deficiency diseases | 1 practical |

Vitamin A – Amaranthus leaves & Carrot

Vitamin B₁ & B₂ – Rice bran, Yeast

Vitamin C – Citrus fruits, Banana

Vitamin D – Milk & Fish liver oil

Vitamin E – Germinating seeds

Vitamin K – Cabbage and Spinach

- | | |
|---|-------------|
| 11. Qualitative detection of following; | 1 practical |
| Glucose- Benedict's test | |
| Starch -Iodine test | |
| Proteins - Biuret test | |
| 12. Qualitative detection of Nitrogenous wastes; | 1 practical |
| Ammonia - Nessler's reagent test ; Urea - Urease test | |
| Uric acid - Folin's uric acid reagent test; Creatinine - Jaffe's test | |

Biostatistics:

- | | |
|---|-------------|
| 13. Construction of graphs using the given data- | 1 practical |
| Histogram, Bar diagram, Pie diagram and Line diagram. | |
| 14. Measuring central tendency using the given data. | 1 practical |
| Mean, Mode and Median | |
-

B.Sc. ZOOLOGY PRACTICAL PAPER IV

SCHEME OF THE PRACTICAL EXAMINATION

Duration: 3 Hours

Max. Marks: 40

- Q 1. Conduct the experiment and report. (by lot). 10 marks
(Principle-2marks, Requirement-1, Procedure-3, Observation and report -4 marks)
- Q 2. Conduct qualitative detection test for samples 2X3=6 marks
a) (proteins/starch/glucose) b) (Nitrogenous wastes)
- Q 3. Identify and comment on **A, B** and **C** 3X3= 9marks
(A-Sense organs /types of muscles, B & C vitamin samples)
- Q 4. Biostatistics:
Construct a graph using the given data (Line/Bar/Pie/Histogram) 5 marks
/Measure of central tendency.
- Q 5. Viva voce. 5 marks
- Q 6. Class records. 5 marks.
-

REFERENCE BOOKS:

1. Lehninger principles of biochemistry Albert L. Lehninger
2. Complete guide to vitamins, minerals, nutrients & supplements H. Winter Griffith
3. Biostatistics by Khan and Khannum(1994).
4. Elements of Biostatistics by Prasad(2016)
5. Animal Physiology by Hoar(1966)
6. Review of Medical Physiology by Ganong(2012)
7. Human Physiology by A.C. Guyton(2006)
8. Animal Physiology by Randol(2001)
9. Animal Physiology by P.S. Verma

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) V SEMESTER

V SEMESTER THEORY: PAPER 5.1 : CELL BIOLOGY, MICROBIOLOGY AND IMMUNOLOGY(25+10+10=45hrs)

Units	TITLE	hrs
	CELL BIOLOGY	
1.1	Ultra structure of animal cell and cell organelles Plasma membrane: structure - Fluid mosaic model, role of lipids in maintaining fluidity of cell membrane. Cell to cell interactions, surface markers, functions and Cell junctions. Ribosomes - different types, subunits, functions. Centrioles and basal bodies- structure and functions. Cytoskeleton- microtubules, microfilaments and intermediate filaments- structure and functions	10
1.2	Chromatin: organization of chromatin, Euchromatin and Heterochromatin , packaging (nucleosome), Metaphase chromosome, polytene and lampbrush chromosomes.	3
1.3	Cell Divisions: Cell cycle G1, S, G2, and M phases & (G0); and Cell cycle regulation. Amitosis, endomitosis, Mitosis-Stages, mitotic apparatus; role of mitotic inhibitors. Meiosis- Stages (Meiosis I stages only), synaptonemal complex and mechanism of crossing over & its significance. Significance of Mitosis and Meiosis	5
1.4	Cancer biology: types; characteristics of cancer cells, tumors, dedifferentiation of cancer cells, oncogenes and tumor suppressor genes. carcinogenesis, Carcinogenic agents (physical, chemical and biological); immunotherapy. Apoptosis.	7
2.1	MICROBIOLOGY Architecture of bacteria and virus. Nutritional requirements in bacteria and nutritional categories, different types of cultural media Microbial replication strategy: bacteria and virus (lytic, lysogenic cycle). Genetic recombination in bacteria: basic concept of transformation, conjugation, and transduction. Microbial interactions-Symbiosis, commensalism. Mutualism between microbes, microbes and plants, microbes and animals. A brief account of Microbial diseases in man -viral – chicken pox, measles, herpes, hepatitis,; bacterial – diphtheria, pneumonia; fungal –aspergillosis, candidiasis.	10
3.1	IMMUNOLOGY Definition, types of immunity; Innate, and acquired immunity, primary and secondary lymphoid organs(Thymus and lymph nodes); types of immune cells, T & B cells and their functions; , antigens, antigenicity ,various forms of antigen- antibody reaction, MHC molecules, immunoglobulins :classification, structure& functions of IgG, Hypersensitivity-allergens, Allergy-causes and types Immune response during bacterial (tuberculosis), parasitic (malaria) and viral (HIV) infections, vaccines –attenuated, heat killed and toxoids with examples Monoclonal antibodies.	10

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) V SEMESTER

V SEMESTER THEORY: PAPER 5.2 APPLIED ZOOLOGY, HISTOLOGY AND BIOTECHNIQUES(30+10+05=45hrs)

Units	TITLE	hrs
	APPLIED ZOOLOGY	
1.1	Parasitology - Host-parasite Relationship, Definitive host, Intermediate host, Life history and pathogenicity of <i>Entamoeba histolytica</i> & <i>Schistosoma haematobium</i> .	4
1.2	Insect vectors: Classification & adaptations of Insect vectors, Insects of Medical Importance : Effects and control of <i>Anopheles</i> , <i>Culex</i> , <i>Aedes</i> , <i>Xenopsylla cheopis</i> Insect pests: Effects and Control of <i>Sitophilus oryzae</i> , <i>Achaea janata</i> , <i>Pyrilla perpusilla</i> , & <i>Callosobruchus chinensis</i>	5
1.3	Apiculture: Species, Honey bee morphology and structural adaptations ,Modern methods of bee keeping, economic importance of honey, bee wax & venom; a note on formation of honey& its chemical composition .	4
1.4	Lac culture: Lac cultivation & processing and uses of lac	1
1.5	Vermiculture : Indigenous and exotic Species of earthworms– epigeic, endogeic and anecic species . Methods of vermicomposting..	2
1.6	Sericulture: Mulberry and Non-mulberry silk worms, Life cycle of <i>Bombyx mori</i> . Silk proteins and structure of silk gland. Mulberry silkworm rearing (Chawki and adult worm rearing).	3
1.7	Poultry: Scope, Poultry breeds, Rearing of broilers and layers and poultry diseases(Nutrition deficiency, Bacterial, viral, protozoan , Helminthes and ectoparasites)	3
1.8	Dairy farming: Breeds of Cattle, Collection, processing, preservation and marketing of milk. Cattle breeding techniques: Artificial insemination, Super ovulation and embryo transplantation.	3
1.9	Aquaculture Culturing of Indian major carps and Induced breeding technique, Rearing of ornamental fishes , Culturing of Indian fresh water prawn and Fresh water pearl culture	5
2.1	HISTOLOGY of mammalian organs: Histological structure and functions of Liver, Intestine, Pancreas, Spleen, Kidney, Pituitary, Thyroid , Adrenal glands, testis and ovary. Histochemistry: stains and staining – Types: natural and synthetic dyes, mordents and their mode of action. Immuno-histochemical staining methods. ,Histopathology -Degenerative changes and histopathological manifestations in liver cirrhosis and nephrosis.	10
3.1	BIO-TECHNIQUES Microtechnique: – fixation, embedding, microtomy, staining (simple and differential) and mounting Immuno assay: Principle and applications. Separation techniques: Principle and applications of Centrifugation. Principle and applications of spectrophotometry, Electrophoresis(gel electrophoresis) and Chromatography(Paper chromatography) .	05

B.SC. ZOOLOGY SEMESTER V – PRACTICAL 5.1

CELL BIOLOGY, MICROBIOLOGY, APPLIED ZOOLOGY, HISTOLOGY & BIO-TECHNIQUES

- 15 practicals

1. Study of Mitosis : permanent slides for different stages
2. Study of Meiosis : permanent slides for different stages
3. Preparation of Onion root tip squash and observation of stages of mitosis
4. Preparation of Grasshopper testis squash and observation of stages of meiosis
5. Study of salivary gland chromosomes and lamb brush chromosomes
6. Micrometry: measuring of microscopic objects by using stage micrometer & oculometer
7. Study of mouth parts and sting apparatus of honey bee.
8. Study of life cycle of Bombyx mori, Silk glands, Mulberry & Non-mulberry cocoons
9. Study of Indian major carps – Catla, Mrigal & Rohu.
10. Study of By-products of Poultry, Dairy & Aquaculture
11. Study of histological details with a note on physiology of the following mammalian organs –
Intestine, Liver, Pancreas, Spleen, Kidney, Testis, Ovary and Adrenal
12. Gram staining of bacteria
13. Principle and applications of Centrifuge, Spectrophotometer, Gel electrophoresis & chromatography.

B.SC. ZOOLOGY PRACTICAL PAPER 5.1 -SCHEME OF PRACTICAL EXAMINATION

Time : 3 hrs.

Max.marks : 40

- Q I Make squash preparation of Onion root tip/ Grass hopper testis/
Measurement of cell organelle by micrometry / gram staining (by lot) 6marks
- Q II Identify with reasons **A**(from mitosis) **B** (from meiosis) & **C**(Giant chromosome) 3x2=6marks
- Q III Comment on **D** , **E** ,**F** & **G** (Apiculture, Sericulture, Aquaculture & Byproducts) 4x2=8marks
- Q IV Identify and comment on the slides **H** & **I** (histology slides) 2x3=6marks
- QV Comment on **J** (Instrument) 4marks
- Q VI Viva voce 5marks
- Q VII Class records 5marks

B.SC. ZOOLOGY SEMESTER V – PRACTICAL PAPER- 5.2

PROJECT WORK

Batches consisting of 4 -6 students each are formed. They are given a suitable project work by the Zoology faculty in-charge of the batch. Each batch should conduct survey/observations/experiments and submit the report on the project under the guidance of Zoology faculty. The project work should concentrate on the problems /animals of surrounding area pertaining to zoology. Each batch should work as a team with suitable coordination among them. A copy of project report must be submitted to the department.

PRACTICAL PAPER 5.2-SCHEME OF PRACTICAL EXAMINATION

Project work and report

Time: 3 hrs.

Max. marks : 40

Q I Project submission:

Title and Objectives (about 100 words) should be mentioned clearly in answer book 20 marks

Q II Seminar / Presentation

15 marks

Q III Viva voce / Discussion

5 marks

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) VI SEMESTER

THEORY: PAPER 6.1 GENETICS, MOLECULAR BIOLOGY AND EVOLUTION (18+12+15=45hrs)

Units	TITLE	hrs
	GENETICS	
1.1	Mendel's laws of inheritance, Incomplete dominance, Interaction of genes: Supplementary factor 9: 3: 3:1- comb pattern in fowl, Dominant epistasis 13:3- plumage color in Leghorn, Recessive epistasis 9:3:4-coat color in pigs, Polygenic inheritance- skin color of man. Lethal genes - coat color in mice . Co-dominance, Multiple alleles- ABO blood groups of man ; Rh factor; Isoalleles; Pseudoalleles and position effect.	8
1.2	Sex-linked inheritance: eye color in Drosophila and haemophilia and colorblindness in man; Y-linked genes. Inheritance of sex influenced and sex-limited characters inheritance. Pleiotropy , Sex determination system-XX-XY, XX-XO, ZW-ZZ. Genic balance theory & gynandromorphs	4
1.3	Linkage, Crossing Over and Chromosomal Mapping, Recombination frequency, two factor and three factor crosses.	2
1.4	Mutations: Types of mutations (spontaneous & Induced with examples), Detection of induced mutations by ClB technique Hereditary diseases in man: Autosomal (Down's syndrome), sex chromosome(Turner's & Klienfelter's syndromes), Diseases due to mutation-Sickle cell anemia.	3
1.5	Concept of gene: Units of gene(Cistron, Recon & muton), split genes and jumping genes .	1
2.1	MOLECULAR BIOLOGY Nucleic acid : chemistry; Watson and Crick model of DNA; forms of DNA and types of RNA DNA Replication: DNA Polymerases, mechanism of replication in prokaryotes & eukaryotes Transcription: RNA polymerases and mechanism of transcription in prokaryotes & eukaryotes, Processing of eukaryotic pre mRNA.	8
2.2	Translation: Genetic code, Properties of the genetic code and Wobble Hypothesis; Process of Protein synthesis –translation process. Gene regulation: positive and negative regulation, activators, repressors, enhancers, silencers and promoter elements.	5
3.1	EVOLUTION Theories of Organic evolution : Lamarckism , Drawin-wallace theory of natural selection, Synthetic theory of evolution – Gene mutation, gene flow, genetic drift, isolation, and Natural selection, types of selection. Hardy-Weinberg's Equilibrium Evidences of Organic evolution: Evidences from comparative anatomy & biochemistry. Biogenetic law & embryological evidences	7
3.2	Speciation- concept of species- Allopatric, sympatric, peripatric and parapatric Speciation; Reproductive isolation- pre and post zygotic isolation mechanism Polymorphism: transient and balanced	3
3.3	Evolution of horse and man using fossil data.	4

CURRICULUM IN ZOOLOGY FOR B. Sc. (UG) VI SEMESTER

THEORY: PAPER 6.2 DEVELOPMENTAL BIOLOGY AND ANIMAL BIOTECHNOLOGY (27+18=45hrs)

Units	TITLE	hrs
	DEVELOPMENTAL BIOLOGY	
1.1	Gametogenesis; spermatogenesis & structure of mammalian sperm. Oogenesis, structure of mammalian ovum. Types of eggs: Based on amount of yolk and distribution of yolk with examples. Mosaic and regulative eggs, Cleidoic egg and its significance.	3
1.2	Fertilization: Definition, Types, Mechanism of fertilization and significance. Parthenogenesis :. Definition. , Natural parthenogenesis (arhenotoky and thelytoky) , Artificial parthenogenesis and Significance of parthenogenesis.	4
1.3	Patterns of cleavage – radial, biradial, spiral and bilateral cleavage with examples. Influence of yolk on cleavage.	2
1.4	Blastulation: Comparative account with reference to Frog and Chick.	2
1.5	Fate maps- Presumptive organ forming areas and fate maps in Frog and Chick.	1
1.6	Gastrulation in Chick upto primitive streak.. Foetal membranes of chick – development; structure and function of foetal membranes	3
1.7	Role of organizers in development: Transplantation experiments of Spemann and Mangold, Chemistry of Organiser.	2
1.8	Placenta: Types - Yolk sac and Chorio-allantoic placentation. Deciduate and non deciduate placenta; morphological and histological placental types with suitable examples	2
2.1	Regeneration:.. Definition and types – morphollaxis and epimorphosis with examples. Regeneration in Planarians	2
2.2	Reproductive cycles: Oestrous and Menstrual cycles and their regulation.	2
2.3	Early development of Human foetus : fertilization; morula; blastocyst; implantation; placenta; twins and multiple births , Assisted reproductive techniques . Sexually transmitted diseases and prevention.	4
3.1	Genetic	2
	ANIMAL BIOTECHNOLOGY engineering: Introduction, scope and basic concept of genetic engineering. Enzymology of genetic engineering: Restriction enzymes; DNA ligase; Polymerases	
3.2	Cloning vectors: Plasmids, phage vector, cosmids, shuttle vectors and artificial chromosomes as vectors	3
3.3	Introducing cloned genes in to the host cells: Transformation, Transduction, Particle gun; electroporation; liposome mediated method.	2
3.4	Restriction enzyme analysis; Southern blotting; Northern blotting; <i>in-situ</i> hybridization; RFLP; AFLP; RAPD; DNA finger printing and PCR.	6
3.5	Production of cloned and transgenic animals: Methods of Gene transfer-Nuclear Transplantation, Retroviral Method, DNA microinjection Applications of transgenic animals and knockout mice.	2
3.6	DNA sequencing: Sanger method Genome, Human genome project, genomics & proteomics.	3

B.Sc ZOOLOGY SEMESTER VI – PRACTICAL 6.1 (15 practicals of 3 hrs each)
GENETICS, MOLECULAR BIOLOGY AND EVOLUTION

1. Genetic problems : Dihybrid ratio(One animal and one human); Sex linkage – eye color in Drosophila & color blindness in man; Construction of pedigree charts for haemophilia
2. Study of blood groups (ABO & Rh) with special reference to mode of inheritance; Identification of blood groups and problems on inheritance of blood groups (3 problems)
3. Preparation of Buccal smear for sex chromatin
4. Drosophila study:
 - a) Culture of Drosophila
 - b) Identification of male and female flies
 - c) Study of life cycle
 - d) Mounting of sex comb
 - e) Study of mutants
5. Isolation of DNA from any tissue.
6. EVOLUTION i).Study of Homologous organs: Fore limb bones of terrestrial Vertebrates (Frog& Bird) ii). Study of Analogous organs: Wing of Insect and Bird iii). Study of Vestigial organs: Appendix and Molar tooth. iv) Study of Connecting links: Peripatus and Tornaria larva. v) Study of living fossils: Limulus & Sphenodon vi) Problems related to calculation of allelic frequency using Hardy-Weinberg Equilibrium (at least 3 problems).

PRACTICAL PAPER. 6.1
SCHEME OF PRACTICAL EXAMINATION

Time : 3 hrs.

Max. marks : 40

- Q I Identify the blood group (ABO & Rh) / prepare sex comb of Drosophila /Isolation of DNA /Buccal smear staining for sex chromatin (by lot) 7marks
- Q II Identify with reasons **A & B** (any two from three below) 2X3=6marks
[i] from egg, lava, pupa, male and female Drosophila
[ii] from Drosophila mutants (any one)
- Q III Genetic problem (two problems) 2X4=8
marks
- Q IV Comment on **C, D** (Specimens related to evolution) & **E** (allelic frequency Problem) 3X3=9marks
- Q V Viva voce 5marks
- Q VI Class records 5marks

B.Sc ZOOLOGY SEMESTER VI – PRACTICAL 6.2(15 practical of 3 hrs each)

DEVELOPMENTAL BIOLOGY AND ANIMAL BIOTECHNOLOGY

1. Early development of Frog: Cleavage, Blastula, Gastrula and Neurula.
2. Development of Chick: 18 hrs, 24 hrs, 48 hrs and 72 hrs incubation stages
3. Human embryology: T.S of testis& ovary; Structure of mature sperm& Graafian follicle .
4. Application of DNA Fingerprinting in criminology (photograph of electrophoretic pattern to be given for interpretation by the students)- at least four problems worked out in record.
5. Construction of restriction maps from the data provided.
6. Study of Cloning vectors: pBR 322, pUC18, Phage vector, Cosmid, Shuttle vector
7. Study of Genetic Engineering techniques through photographs i) Southern Blotting ii) Northern Blotting iii) DNA Sequencing (Sanger's Method) iv) PCR v) RAPD vi) RFLP
8. Visit to Biotechnology lab/ company.

PRACTICAL PAPER. 6.2 SCHEME OF PRACTICAL EXAMINATION

Time : 3 hrs.

Max. marks : 40

- | | |
|---|--------------|
| Q I Identify with reasons A&B (Frog embryo stages)
C& D (Chick embryo stages) and E (Human) | 5x3=15marks |
| Q II DNA finger print analysis of given photograph | 3 marks |
| Q III Comment on F (cloning vector); G & H (GE techniques) | 3X4= 12marks |
| Q IV Viva-voce | 5marks |
| Q V Class records | 5marks |

Suggested Readings:

1. Parasitology (Protozoology and Helminthology) – K. D. Chatterjee, Chatterjee Medial Publishers.
2. Economic Zoology by Shukla and Upadayana(2016).
3. Economic Zoology by Reena and Mattur(2006).
4. Cell biology by C.B. Power Vol I and II(2010)
5. Cell biology by Tomer(2005)
6. Cellular and Molecular Biology Rastogi publication(2017)
7. Bloom and D. Faweett. Text book of histology. 10th Ed.
8. Janis Kuby. 1997. Text book of Immunology. 3rd Ed.
9. Histology by Bailey(1975) 10. Histology by Bevelander(1979)
11. Histology by Ham(1987)
12. Histology by Berry(2015)
13. Genetic Engineering by Sandhya Mitra(2015)
14. Gene cloning by Brown(2016)
15. Molecular biotechnology by Sathyanarayana U(2008)
16. Biotechnology by S.S. Purohith(2012)|
17. Transgenic animals by M.M.Ranga(2006)
18. Animal Biotechnology by M.M. Ranga(2007)
19. Molecular Biotechnology by Chennarayappa(2007)
20. Human Genetics by Mange and Mange(1993)
21. Principles of Genetics by Robert H Tamarin Ta Ta McGraw- Hill pub(2004).
- 22.** Genetics by Monroe W. Strickberger , Mac Millan Pub(2008)
23. Introduction to Embryology by Balinsky B.L.(1970)
24. Development by Beril N J and Karpotata(1978)
25. Developmental biology by Gilbert(2016)
26. Embryology by Gilbert and Raunio(1997)
27. Embryology by Barath 6. Chick Embryology by Patten(1971)
28. Gilbert, S.F. 2006. Developmental Biology (9th edn).

29. Gardner. J.E., Simmons, J.M and D.P. Snustad. 2007. Principles of Genetics (8th edn)..
30. Griffiths et al., 2002. Modern Genetic Analysis. W.H. Freeman, NY, USA.
31. Hartl, L.D., and E.W. Jones. 2009. Genetics: Analysis of Genes and Genomes (7th edn).
33. Herskowitz I.H, 1977. Principles of Genetics . Collier Macmillan.
34. Lewin B, 2008 .Genes (9th edn). Jones and Barlett Publishers Inc.
35. Klug, W.S. and Michael R. Cummings, 2009. Concept of Genetics.
36. Molecular Biology of Gene (5th edn.). Pearson Education Inc.
37. Systems Biology-Definitions & Perspectives.
38. Attwood T.K. and Parry Smith, D. 2006. Introduction to Bioinformatics. Pearson Education.
39. Bourne P. E and Weissig H, 2003. Structural Bioinformatics. Wiley -Liss. USA
40. Ghatak K.L. 2011. Techniques and Methods in Biology. PHI Learning Pvt. Ltd. New Delhi
41. Gupta A. 2009. Instrumentation and Bio-Analytical Techniques. Pragati Prakashan, Meerut.
42. Cooper, G.M. and Hausman, R.E. 2009. The cell: A Molecular Approach
43. Arora, D.R. and Arora, B. 2008. Text Book of Microbiology. CBS Publishers
44. Chakraborty, P. A. 2009. Text Book of Microbiology. New Central Book Agency.
45. Das, H.K. 2007. Text book of Biotechnology. Wiley India Pvt. Ltd.
46. Singh .B.D. 2006. Biotechnology. Kalyani Publishers, New Delhi.
47. Essentials of Biotechnology. Ane Books Pvt. Ltd.!
48. Ivan M. Roitt, 2002. Essential of Immunology. ELBS, New Delhi.
49. Khan. F.H. 2009. The Elements of Immunology. Pearson Education.
50. Richard Coico and Geoffrey Sunshine. 2009. Immunology: A short course.
51. C.B.L. Srivastava, Fish Biology, Narendra Publishing House
52. K. D. Chatterjee (2009). Parasitology: Protozoology and Helminthology. Knobil, E. et al. (eds). The Physiology of Reproduction. Raven Press Ltd.
53. Griffiths, A.J.F., J.H. Miller, Suzuki, D.T., Lewontin, R.C. and Gelbart, W.M. (2009).

Q.P.Code-.....

Theory Question paper pattern

SEMESTER B.Sc. DEGREE EXAMINATION May/Nov 201-

Semester scheme

ZOOLOGY

Time : 3 Hours

Max. Marks : 50

Instructions to the candidates:

1. *Draw labeled diagrams wherever necessary*
2. *All questions are compulsory*

I. Answer any **FIVE** of the following questions:

5x2=10 marks

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

II. Explain briefly any **FOUR** of the following:

4x5=20 marks

- 8
- 9
- 10
- 11
- 12
- 13

III. Answer any **TWO** of the following :

2x10=20 marks

- 14
- 15
- 16

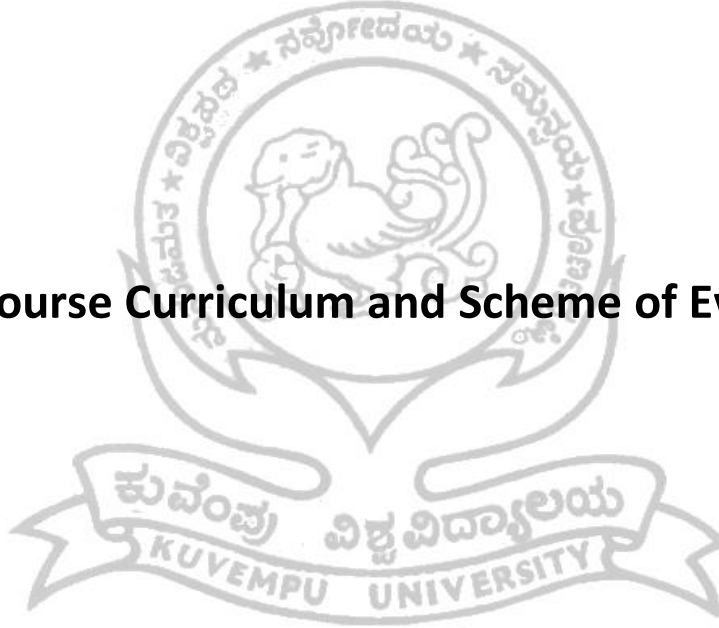


KUVEMPU

UNIVERSITY

B.Sc., BOTANY PROGRAMME

Course Curriculum and Scheme of Evaluation



B.Sc., BOTANY
FIRST SEMESTER
Paper I (SSA 790) Q.P. Code - 15130

VIRUSES, BACTERIA, CYANOBACTERIA, ALGAE, FUNGI AND LICHENS

Syllabus

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 60hr
Total number of teaching hours / week	- 04hr
Duration of theory exam	-03hr
Practical- Based on theory paper I	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

Viruses ; Ultrastructure of TMV and T-4 Bacteriophage, Multiplication of Viruses, Common viral diseases of plants – Tobacco mosaic diseases. Bean mosaic disease and Leaf curl of Tomato.

Mycoplasma ; Structure and grassy shoot disease of sugarcane.

Bacteria; Introduction, Morphological types, flagellation, ultra structure, nutrition, reproduction – cell division, conjugation, transduction and transformation, Economic importance and diseases – Citrus canker, Late blight of paddy, Red stripe of sugarcane and Angular leaf spot of Cotton.

Cyanobacteria; Occurrence, Structure, reproduction and economic importance,(Biofertilizer, food, eutrophication and algal blooms) of cyanobacteria.

Type study–*Nostoc* and *Spirulina*.

-16hr

Algae – General characters, Classification based on Chapman and Chapman system and economic importance.

Occurrence, structure of thallus, Reproduction and life cycle of the following.

Chlorophyceae- *Volvox, Spirogyra, Oedogonium, Chara*

Xanthophyceae-*Vaucheria*

Phaeophyceae – *Sargassum*

Rhodophyceae – *Batrachospermum*

- 22hr

Fungi - General characters, Classification based on major classes based on Alexopoulos system and economic importance of fungi.

Structure, nutrition, reproduction, lifecycle, disease symptoms and controlling methods of the following.

Oomyctes- *Phytophthora, Albugo.*

Zygomycetes- *Rhizopus*

Ascomycetes- *Penicillium, Xylaria*

Basidiomycetes – *Puccinia graminis-tritici*

Deuteromycetes – *Cercospora*

Lichens – Occurrence and classification-Crustose, foliose, and fruticose. Structure : external and internal, reproduction and economic importance of Lichens.

-

-22hr

B.Sc. Botany

FIRST SEMESTER

Practical -I model question paper

Duration of practical examination: 3 hrs

Max.Marks-40

(VIRUSES, BACTERIA, CYANOBACTERIA, ALGAE, FUNGI AND LICHENS.)

Q-I. Identify the specimens A, B & C sketch, label and give reasons. -09

Q-II. Write critical notes D & E, (Macroscopic) -05

Q-III. Write pathological aspects of F, G & H -06

Q-IV. Identify the slides I, J, K & L with reasons -10

Record -05

Viva -05

SCHEME OF EVALUATION FOR BOTANY PRACTICAL-I

First semester Practical-I

Time:03 hours

Max.Marks-40

(VIRUSES, BACTERIA, CYANOBACTERIA, ALGAE, FUNGI AND LICHENS.)

- | | | |
|------|---|------|
| I. | Identify the specimens A, B & C
Identification =01
Sketch & label =1 ½ marks
Reasons =1/2 marks
(Algae-01, Fungi-01 and Lichens-01.) | -09 |
| II. | Critical notes on D & E (Macroscopic)
Identification =01
Critical notes=1 ½
(Algae-01, Fungi-01) | - 05 |
| III. | Identify and comments on F,G& H
Hological specimen Bacteria, Virus, Fungi
Identification -01
Symptoms & control aspect =01 | - 06 |
| IV. | Identify the slides I, J, K & L with reasons
Identification =01
Reasons=1 ½ marks
(One from Bacteria, / one from Cyanobacteria/ Lichens, one from Fungi, one from algae)
Record-05
Viva-05 | - 10 |

B.Sc BOTANY
SECOND SEMESTER
Paper II (SSB 790) Q.P. Code – 15230.

BRYOPHYTA, PTERIDOPHYTA, PALAEOBOTANY AND GYMNOSPERMS

Syllabus

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 60hr
Total number of teaching hours / week	- 04hr
Duration of theory exam	-03hr
Practical- Based on theory paper II	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

Bryophyta – Introduction, General characters, alternation of generation, classification. Structure: external and internal and reproduction of the following examples.

Hepaticopsida– Riccia and Porella

Anthocerotopsida – Anthoceros

Bryopsida – Polytrichum

Brief account of evolution of sporophytes and economic importance of Bryophytes. - **15hr**

Pteridophyta– Introduction, classification, occurrence, morphology, anatomy, reproduction and life cycle of the following examples.

Psilopsida – *Psilotum*

Lycopsidea– *Lycopodiumcernnum* ,*Selaginella*.

Sphenopsida – *Equisetum*

Pteropsida – *Marselia*

Brief account on stellar evolution, Heterospory and seed habit, economic importance of Pteridophytes. - **25hr**

Palaeobotany – Introduction, process of fossilization, types of fossils, geological time scale, a brief account of **Rhynia and Lepidodendron stem**. - **05hr**

Gymnosperms - General characters, affinities of gymnosperms, classification, morphology, anatomy of root, stem and leaf. Reproduction and life cycle of
Cycadopsida -*Cycas*,
Coniferopsida -*Pinus*
Gnetopsida - *Gnetum*.

Economic importance of Gymnosperms -

15hr

[Developmental aspects need not to be studied]

B.Sc. Botany

SECOND SEMESTER

Model question paper

(BRYOPHYTA, PTERIDOPHYTA, PALEOBOTANY AND GYMNOSPERMS)

Time :03hrs

Max.Marks-40

- | | |
|--|-----|
| Q-I. Identify the specimens A, B&C sketch, label and give reasons. | -09 |
| Q-II. Write critical notes D &E, | -06 |
| Q-III. Identify the slides F, G, H, I, & J with reasons | -10 |
| Q-IV. Prepare temporary staining mount of 'K' Identify, sketch, and label leave it for observation | -05 |
| Record- | 05 |
| Viva- | 05 |

SCHEME OF EVALUATION FOR BOTANY PRACTICAL-II

(BROYOPHYTA, PTERIDOPHYTA, PALEOBOTANY AND GYMNOSPERMS)

Time:03 hours

Max.Marks-40

Q-I. Identify the specimens A, B & C -09

Identification =01

Sketch & label =1

Reasons =1

(One from Broyophyta, One from Pteridophyta, and One from Gymnosperms)

Q-II. Critical notes on D & E (Macroscopic) - 06

Identification =01

Critical notes= 02

(One from Broyophyta, /Gymnosperms & One from Pteridophyta,)

Q-III. Identify the slides, F, G, H, I, & J with reasons -10

Identification =01

Reasons =1

(One from Broyophyta, One from Paleobotany, Two from Pteridophyta, and One from Gymnosperms)

Q-V. Prepare temporary stained mount of 'K' sketch, label and identify leave the preparation for inspection. (Pteridophyte or Gymnosperms) 05

Preparation=02

Identification=01

Sketch label=02

Record -05

Viva-voce -05

**B.Sc BOTANY
THIRD SEMESTER
Paper III. (SSC 790) Q.P Code 15330.**

HISTOLOGY, ANATOMY, EMBRYOLOGY AND PALYNOLOGY

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 60hr
Total number of teaching hours / week	- 04hr
Duration of theory exam	-03hr
Practical- Based on theory paper III	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

Histology: Meristems – Structure and function, Classification based on Origin, function and position. Histogen and Tunica corpus theory. Structure and function of parenchyma, Collenchyma, Sclerenchyma, Xylem and Phloem. **-07hr**

Tissue system:

Dermal–Structure and function of epidermis, Stomata, hairs and glandular hairs **-02hr**

Ground tissue system - Structure and function of Cortex, Endodermis, Pericycle and Pith **-03hr**

Vascular tissue system – Types of vascular bundles- Radial, Conjoint, Collateral, Bicollateral, and concentric. **-02hr**

Anatomy: - Internal structure of

Dicot - Tridax and Cucurbita stem, Cicer root and Tridax leaf.

Monocot –Grass stem, Canna root and Grass leaf.

Normal secondary growth- in Tridax stem. Formation of cambial ring, Storied and non-storied cambium, activity of cambium, secondary xylem, **secondary** phloem, vascular rays, sap wood, heart wood, growth rings, tyloses and periderm . **-10hr**

Secondary growth in typical dicot root –Cicer.

Anamolous secondary growth in Boerhavia and Dracena stem. **-06hr**

Embryology: Historical account, contribution of Maheshwari and BGL Swamy -02hr

Microsporogenesis – Development of Anther, male gametophyte and Pollen embryo sac. -03hr

Megasporogenesis – Types of ovules, differentiation of archesporial initial, formation of megaspore, types of tetrads, types of embryosac [Monosporic, Bisporic and Tetrasporic]. Development of monosporic embryosac [Polygonum type only]. Double fertilization, Triple fusion and its significance. -06hr

Endosperm: Types- Cellular, Helobial and free nuclear . Detailed study of cellular type of endosperm, endosperm haustorium and vermiform appendage. -04hr

Embryo: Types – Dicot and Monocot, development of dicot embryo Crucifer type. Suspensor haustorium,[definitionwithexample]. -02hr

Apomixis - a brief account -02hr

Polyembryony – Types, causes of poly embryony. Significance - 02hr

Palynology – Definition pollen morphology –Pollen structure, size and shape of pollen grains, spherical, sub-porate, prolate and perprolate, Wall layers and their morphology ,exine, sexine, ecto and endoexine, Nexine- I, II, and II., Pollen kit, Number, position and character of aperture and Exine sculpture. -06hr

Pollination: Types – Self and cross pollination, types of cross pollination, piston and lever mechanism, Contrivances of cross pollination. -03hr

B.Sc. Botany

THIRD SEMESTER

Practical Model question paper

(HISTOLOGY, ANATOMY, EMBRYOLOGY, AND PALYNOLOGY)

Time:03 hours

Max.Marks-40

- | | | |
|------|---|------|
| I. | Identify the specimen – ‘A’ | -03 |
| II. | Mount and sketch of Endosperm/Embryo/Pollinia of - ‘B’ | -05 |
| III. | Calculate of the percentage of viability/Fertility of - ‘C’ | -04 |
| IV. | Preparation of temporary stained slide of – ‘D’ | -06 |
| V. | Identify the slides E, F,G & H | - 12 |
| | Record- | -05 |
| | Viva- | -05 |

SCHEME OF EVALUATION FOR BOTANY PRACTICAL-III

(HISTOLOGY, ANATOMY, EMBRYOLOGY, AND PALYNOLOGY)

- | | | |
|------|---|-----|
| I. | Mount, identify, sketch, and label the specimen 'A' | -03 |
| | From palynology | |
| | Identification =01 | |
| | Sketch and label=01 | |
| | Mounting=01 | |
| II. | Mount and sketch the Endosperm/Embryo/Pollinia of 'B' | -05 |
| | Mount=03 | |
| | Identification =01 | |
| | Sketch and label=01 | |
| III. | Calculate the percentage of viability/Fertility of 'C' | -04 |
| | Preparation=02 | |
| | Calculation=02 | |
| IV. | Preparation of temporary stained slide 'D' sketch, label, & identify with reason
(Anatomy) -06 | |
| | Preparation=03 | |
| | Sketch & Label=01 | |
| | Identification=01 | |
| | Reason=01 | |
| V. | Identify the slides E, F, G, & H with reasons | -12 |
| | Identification=01 | |
| | Sketch & label=01 | |
| | Reason=01 | |

(One from Histology, one from Anatomy, one from Embryology ,and one from Palynology)

**B.Sc BOTANY
FOURTH SEMESTER
Paper IV. (SSD 790) Q.P Code 15430.**

ECOLOGY, ENVIRONMENTAL BIOLOGY AND PHYTOGEOGRAPHY

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 60hr
Total number of teaching hours / week	- 04hr
Duration of theory exam	-03hr
Practical- Based on theory paper IV	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

Theory:

Ecology: Definition and Scope, Factors affecting plant growth and their distribution, Climatic factors (light, temperature, rainfall, wind & atmospheric humidity), Edaphic factors (Soil formation, soil profile, soil air and soil biota), Biotic factors & Topographic factors.

Response of Plants to stress conditions- Hydrophytes, Mesophytes, Xerophytes, Epiphytes, Halophytes, Psamophytes and Parasites.
- **-15hrs**

Ecosystem: Biosphere, concept and structure of ecosystem. Types of ecosystem (pond, forest and grassland), Ecological pyramids, Ecological niche, Food chain, Food web, Ecotone, tropic level, energy flow, Law of thermodynamics and Biogeochemical cycles (Nitrogen, Hydrologic, Carbon, Sulphur and Phosphorous cycles). **-14hrs**

Ecological Successions: Process of plant succession, Hydrosere and Xerosere, concept of climax vegetation. **- 02 hrs**

Community Ecology: Methods of studying natural vegetation Qualitative and Quantitative techniques (Quadrats, Bisects and Transects). **-02hrs**

Environmental Biology

Natural Resources: Introduction, renewable and non-renewable resources, a study on fuel and soil resources, general account on NTFPs. **-05hrs**

Environmental Pollution: Source of air, water, land and noise pollution, Causes & effects of air, water, land and noise pollution (Global warming, Acid rain, Smog & fog, Eutrophication, Ozone depletion, Green house effect, Acidification, Solid wastes, Nuclear hazards) and Control/management of pollution. **-06hrs**

Forestry: Deforestations, Reforestations, Afforestations and Social forestry, importance of forestry **-02hrs**

Conservation Ecology: Soil erosions and its types, control of soil erosions, conservation and management of soil erosions. Wet lands, Sacred Grooves, National parks, Wildlife Sanctuaries and Biosphere reserves, Biodiversity Hot spots of India. **-06hrs**

Phytogeography: Phytogeographical regions of India, Types of forest in India and Karnataka, endemism. **04hrs**

Population ecology: Effect of habitat characteristics of populations, population density, mortality, natality, and populations interactions. **02 hrs**

B. Sc. Botany

FOURTH SEMESTER

PRACTICAL MODEL QUESTION PAPER PRACTICAL-IV

Practical-IV: ECOLOGY, ENVIRONMENTAL BIOLOGY AND PHYTOGEOGRAPHY

Practical Model Question paper

Time: 03 hours

Max. Marks 40

1. Mount the anatomical section of the material 'A' 06 Marks
2. Comment on the specimens 'B' and 'C' 06 Marks
3. Comment on ecological Instrument 'D' 04 Marks
4. Identify the slides 'E' & 'F' with proper ecological reasons 04 Marks
5. Determination of Soil P^H **OR** Water holding capacity of soil **OR** Estimation of Chloride in given water samples. 06 Marks
6. Mapping of vegetation of Karnataka, Marking and labelling and comment
- 04 Marks
7. Viva 05 Marks
8. Class Records 05 Marks

SCHEME OF EVALUATION FOR BOTANY PRACTICAL-IV

Practical-IV: ECOLOGY, ENVIRONMENTAL BIOLOGY AND PHYTOGEOGRAPHY

1. Identification of 'A' Hydrophytes/ Xerophytes/Epiphytes 06 Marks
Preparation: 03 Marks
Identification & reason: 02 Marks
Sketch & Label: 01 Marks
2. Comment on the specimens B and C 06 Marks
Identification: 01 Marks
Comments: 02 Marks
(Hydrophytes/Xerophytes/ Epiphytes/Halophytes/ parasite/Psamophytes)
3. Comment on ecological Instrument 'D' 04 Marks
Identification: 01 Marks
Comments: 02 Marks
Uses: 01
4. Identify the slides E & F with proper ecological reasons 04 Marks
Identification: 01 Marks
Comments: 01 Marks
5. Determination of Soil P^H **OR** Water holding capacity of soil **OR** Estimation of Chloride of given water samples. 06 Marks
Procedure : 02
Readings: 02
Results : 02
6. Mapping of vegetation of Karnataka ,Marking ,labeling and comment- 04 Marks (1+1+2)
7. Viva 05 Marks
8. Class Records 05 Marks

B.Sc BOTANY
FIFTH SEMESTER
Paper V. (SSE 790) Q.P Code 15549.

MORPHOLOGY, TAXONOMY, ECONOMIC BOTANY AND ETHNO BOTANY

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 45hr
Total number of teaching hours / week	- 03hr
Duration of theory exam	-03hr
Practical- Based on theory paper V	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

MORPHOLOGY: Vegetative Morphology

Root: General introduction including classification. Modification for storage (fusiform, conical, napiform and fasciculate), support (epiphytic and aerial) and respiration (respiratory/pneumatophores) floating and sucking (haustoria).

Stem: General introduction including branching type. Modification:-Rhizome, stem tuber, bulb, corm, stolon, sucker, off-set, phylloclade, cladode, thorn and tendril.

Leaf: General introduction, Types (simple and compound), Phyllotaxy (alternate, opposite and whorled) stipules.

Modification: phyllode, spines, tendril, hooks, Insectivorous plant-pitcher plant, sundew plant .

Floral Morphology:

Inflorescence- general account of racemose and cymose including special cymes.

Flower: Complete account of floral morphology - Gamosepalous, polysepalous, gamopetalous, polypetalous condition, aestivation, attachment and dehiscence and cohesion of anthers, apocarpous and syncarpous, placentation, style and stigma, floral formula and floral diagram.

Fruit: General account including classification and types of fruits. **-15hr**

TAXONOMY OF ANGIOSPERMS:

Principles of classification, Binomial nomenclature, species concept, system of classification by Bentham and Hooker, Herbarium techniques and importance of herbaria of India.

Study of following families with plants of economic importance (Bentham and Hooker's system to be followed).

Dicots: Annonaceae, Brassicaceae, Capraidaceae, Malvaceae, Rutaceae, Anacardiaceae, Fabaceae (Caesalpinioideae, Mimosoideae and Papilionoidae), Myrtaceae, Cucurbitaceae, Apiaceae, Rubiaceae, Asteraceae, Apocynaceae, Asclepiadaceae, Convolvulaceae, Solanaceae, Acanthaceae, Lamiaceae, Verbinaceae, Amaranthaceae and Euphorbiaceae.

Monocots: Orchidaceae, Liliaceae, Arecaceae, Poaceae, and Cannaceae. **- 22hr**

ECONOMIC BOTANY:

Food: Cereals, Millets and Pulses: Jowar, Ragi, Wheat, Rice, Black gram and Bengal gram.

Oils and Fats: Groundnut, Coconut, Sunflower.

Beverages: Tea, Coffee and Cocoa.

Textile Fibres: Cotton and Coir.

Spices: Cardamom, Clove, and Cinnamon.

Timber: Teak, Rosewood, and Neem.

Narcotic: Tobacco and Opium.

Medicinal plants: *Rauwolfia serpentina*, *Vincarosea*, *Tylophoraasthimatica*, *Cinchona officinalis*, *Withaniasomnifera*, *Tinosporacordilofia*, *Ocimum*, Garlic, *Aloe vera*, Turmeric and Ginger. **-10hr**

ETHNOBOTANY:

A general account of Ethnobotany and its significance.

Contributions of Indian ethnobotanists: S K Jain, R. R. Rao, K.S Manilal, and R. K Arora. -
- 03hr

B. Sc. Botany

FIFTH SEMESTER

MODEL PRACTICAL QUESTION PAPER PRACTICAL-V

(MORPHOLOGY, TAXONOMY, ECONOMIC BOTANY AND ETHNOBOTANY)

Time- 3 hrs

Marks - 40

- | | | |
|------|--|------|
| I. | Identify the families , A,B,C,D with reasons | - 12 |
| II. | Describe 'E' technical terms and draw floral diagram with floral formula F | - 06 |
| III. | Write the morphological and Biological importance of G,H & I | -06 |
| IV. | Write the economic importance of J & K | - 04 |
| V. | Identify and comment on Ethnobotanist L | - 02 |
| VI. | Viva | - 05 |
| VII. | Record | - 05 |

PAPER V- PRACTICAL SYLLABUS
MORPHOLOGY, TAXONOMY , ECONOMIC BOTANY & ETHNOBOTANY

MORPHOLOGY

1. Root modification -
Tap root - Fusiform , Napiform and Conical root.
2. Stem Modification -
Underground - Rhizome , Tubers , Bulb, and Corm.
3. Leaf modification -
Tendrils [Gloriosa /Pea] and Stipules [Smilax] and available insectivorous plant specimens.
4. Inflorescence - Types of Racemose (Simple raceme, Spike, Spadix ,Corymb, Head , Globose head and Umbel) , Cymose inflorescence (Simple, Dichacial , Polychacial) and Special type (Cyathium, and Verticelaster)
5. Fruits - Legume, Siliqua, Berry, drupe, Pepo, Hesperidium, Pome, Eterio of berries / Follicle.

TAXONOMY

1. Any six families from Polypetalae, six from gamopetalae and two families from each Monocots and monochlamydae. Inflorescence/ Root/stem/leaf/parts used.
2. **Demonstration of herbarium techniques.**
3. Botanical tour is compulsory
4. **Herbarium submission is deleted from the practical syllabus**
5. **ECONOMIC BOTANY**-As prescribed by the Economic Botany syllabus
6. **ETHNOBOTANY**- as per theory syllabus

SCHEME OF EVALUATION FOR BOTANY PRACTICAL-V

MORPHOLOGY, TAXONOMY, ECONOMIC BOTANY & ETHNOBOTANY

- | | | |
|------|---|-----|
| I. | Identify the families A,B,C,D with reasons
Three from polypetale and gamopetale, one from monochlamydeae/monocot
Identification =01
Salient features=02 | -12 |
| II. | Describe 'E' technical terms and draw floral diagram with floral formula F
E-Technical description = 03 marks
F- Floral diagram and floral formula= 2+1 marks | -06 |
| III. | Write the morphological and Biological importance of G,H & I

G= Root/Stem/Leaf modification
H=Inflorescene
I=Fruit
(Identification-01 marks , comments-01marks) | -06 |
| IV. | Write the economic importance of J & K
J = 02 marks, K= 02 marks
Monocot and Dicot: botanical name, family, parts used and uses | -04 |
| V. | Identify and comment on Ethnobotanist L
Identification=01 comment=01 | -02 |
| VI. | Viva | 05 |
| VII. | Record | 05 |

B.Sc BOTANY

FIFTH SEMESTER

Paper VI. (SSE 791) Q.P Code 15550.

CELL BIOLOGY AND CYTOGENETICS

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 45hr
Total number of teaching hours / week	- 03hr
Duration of theory exam	-03hr
Practical- Based on theory paper VI	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

The Cell: Ultra structure of a plant cell, organization, function and its components- cell wall, membranes (fluid mosaic model) Endoplasmic reticulum, Golgi apparatus, Lysosomes, Peroxisomes, Ribosomes, Mitochondria, Plastids, Cytoplasm, Vacuole, Cell sap, Non-living, inclusions, Nucleus, Nucleoplasm, Nuclear membrane, Pores and Nucleolus.

Chromosomes: Size, number, structure, chromatids, centromere, telomere, satellite, secondary constriction. Nuclear organizer. Types of chromosomes (based on position of centromere), Karyotype, heterochromatin (facultative and constitutive heterochromatin). Euchromatin, Chromosomal Model including nucleosome model; Mitosis and Meiosis in plants Chromosomal aberrations (deletion, duplication, inversion, translocations).

Variation in chromosome number: Polyploidy (Anueploidy, euploidy, autopolyploidy, allopolyploidy- with reference to Raphanobrassica), Character of Polyploidy and its significance of Polyploidy. **-15h**

Nucleic acids: Chemical composition of DNA and RNA.

RNA: Occurrence, types, structure, functions.

DNA: Occurrence, types, structure (double helix model), mechanism of DNA replication (semi conservative method)

Gene Mutation: Mutation and Mutagens (spontaneous, induced: point mutation).

Concept of Gene: Gene expression and regulation- exons, introns, inducible and repressible genes: the operon concept; lac operon(inducible)and repression operon(tryptophan).

Genetic Code: Code dictionary, properties of genetic code.

Protein synthesis: Central dogma: mechanism of protein synthesis transcription and translation: co-linearity. **- 15h**

Mendelian Genetics : Biography of Mendel in brief: Mendel's experiments: Monohybrid cross-law of dominance, law of segregation, purity of gametes. Homozygous, heterozygous, phenotype, genotype, monohybrid test cross, Dihybrid cross – law of independent assortment, dihybrid test cross. Mention of trihybrid crosses, incomplete dominance (*Mirabilis jalapa*, Snapdragon).

Modification of Mendelian Ratios: (With reference to plant examples) Interaction of genes – Epistasis(dominant and recessive); supplementary factors, complementary factors: multiple alleles(self-sterility in *Nicotiana*), Linkage and crossing over(*Maize*).

Sex determination in plants: Chromosomal mechanisms of sex determination methods- XX-XY, ZZ-ZW and XX-XO (only plant examples)- *Melandirum*, *Rumex acetosa* (tripartite), *Humulus lupulus* (tetrapartite). **- 15h**

B.Sc., Botany

FIFTH SEMESTER

PAPER- VI: CELL BIOLOGY AND CYTOGENETICS-PRACTICAL SYLLABUS

1. Preparation of Mitotic slides. Ex: Onion root tips.
2. Preparation of Meiotic slides. Ex :Onion flower buds, Rheo
3. Study of different stages of mitosis and meiosis from permanent slides.
4. Solve the genetic problems from the given list
5. Technique of making permanent slides in mitosis and meiosis

B.Sc., Botany

FIFTH SEMESTER

PAPER- VI: CELL BIOLOGY AND CYTOGENETICS

Model Practical question paper -VI

Duration: 3 hrs

Marks - 40

1. Prepare squash of material 'A' Identify, sketch, label the stages with reasons. -08
 2. Prepare smear of material 'B' Identify, sketch, label the stages with reasons. -06
 3. Identify the slides 'C' and 'D'(one from mitosis and one from meiosis) -06
 4. Solve the genetic problem 'E' and 'F' -10
- Viva -05
Record -05

PAPER- VI: CELL BIOLOGY AND CYTOGENETICS

SCHEME OF EVALUATION FOR PAPER-VI

Duration: 3 hrs

Marks - 40

1. Prepare squash of material 'A' Identify, sketch, label the stages with reasons. -08
Preparation=05 marks
Identification with reasons=01 marks
Sketch & label=02 marks
2. Prepare smear of material 'B' Identify, sketch, label the stages with reasons. -06
Onion/Rheo flower bud
Preparation=03 marks
Identification =01 marks
Sketch & label=02 marks
3. Identify the slides 'C' and 'D'(one from mitosis and one from meiosis) -06
Identification =01 marks, reason=01 marks
Sketch & label=01 marks
4. Solve the genetic problem 'E' and 'F' -10
Monohybrid/dihybrid/interaction factors/incomplete dominance/crossing over
Viva -05
Record -05

B.Sc., Botany

SIXTH SEMESTER

Paper- VII(SSF 790). Q.P. Code 15649.

PLANT PHYSIOLOGY

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 45hr
Total number of teaching hours / week	- 03hr
Duration of theory exam	-03hr
Practical- Based on theory paper VII	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

Plant Water Relation: Significance of water for plants. Solutions (Molar and Mole), colloidal systems (hydrophilic and hydrophobic). Osmosis (O.P, T.P, D.P.D, and water potential. Plasmolysis, exosmosis, deplasmolysis and endosmosis)

Absorption of water: Mechanism active osmotic and active non osmotic absorption and passive absorption. Ascent of sap-path (only Balsam experiment) mechanism, Root pressure and T.C.T theory.

Absorption of Mineral Salts: Mechanism of absorption passive absorption (diffusion, mass flow, -exchange, Donnan equilibrium), active absorption (Lundergardh and Burstrom) Cytochrome pump theory, Lecithin cycle , carrier concept) **.- 10hr**

Mineral Nutrition: Essential and Non-essential elements, Micro and Marco nutrients. Role and deficiency symptoms of N.P.K and Mg, Fe, Cu.

Transpiration: Types of transpiration, mechanism of stomatal transpiration – structure of stomata, mechanism of stomatal movement. Significance of transpiration, Guttation and wilting point.

Translocation of Solutes: Types (upward, radial and downward), path (phloem ringing experiment, protoplasmic streaming theory, and mass flow theory).

Enzymes: Nomenclature, structure, classification and properties. **- 10hr**

Photosynthesis: Structure and function of chloroplast, photosynthesis pigment, Photosystem I and Photosystem II. The Z scheme the light, and dark reaction, C3 and C4 pathway. The law of limiting factor, factors affecting photosynthesis. Photosynthesis in bacteria. CAM photosynthesis.

Respiration: Introduction, types, Biochemical pathways of respiration –glycolysis. TCA cycle, electron transport system and terminal oxidation. An account of photorespiration and its significance. An account of anaerobic respiration and fermentation. Signification as an industrial process. **- 15h**

Carbohydrates: Importance of carbohydrates, definition, classification, common carbohydrates in plant glucose, fructose, sucrose, starch, cellulose, pectose.

Phytohormones: Definition, types of hormones, physiological and practical application of auxins, gibberellins, cytokinins, ethylene, ABA.

Physiology of flowering: Photoperiodism, types, role of phytochrome, vernalisation, seed dormancy.

Plant Movement: Introduction, classification, trophic movement. **- 10h**

B.Sc., Botany

SIXTH SEMESTER

PAPER-VII; PRACTICAL SYLLABUS

List of major experiments.

1. Measurement of DPD in plants (Potato) by gravimetric method.
2. Ganong's photometer – Rate of transpiration under different conditions of light and wind.
3. Relation between absorption and transpiration.
4. Suction force due to transpiration.
5. Evolution of oxygen by bubble counting method under different wave length of light using color transparencies – Normal, Red, blue, yellow or green (During examination different condition need not to be asked).
6. Experiment to demonstrate the presence of starch in leaves.
7. Separation of chlorophyll pigments by paper chromatographic method.
8. Ganong's respirometer- demonstrated that CO₂ is liberated during respiration.

List of Minor experiments

1. Potato osmoscope to demonstrate endosmosis and ex-osmosis
2. Bell jar experiment
3. Light's screen experiment
4. Mohl's half leaf experiment.
5. Dewar's flask expt
6. Kuhne's fermentation vessel
7. Phototropism
8. Hydrotropism
9. Geotropism
10. Arc indicator

Paper- VII (SSF 790). PLANT PHYSIOLOGY

Time- 3 hrs

Marks - 40

Practical VII: Question paper model

1. Conduct major experiment **A**. Write Requirement, Procedure, Record the Results with conclusions **-12**
2. Comment on experiment **B , C and D.** **-12**
3. Investigate the chemical nature of **E.** **-06**
4. Viva **- 05**
5. Record **-05**

PLANT PHYSIOLOGY

SCHEME OF EVALUATION FOR PAPER-VII

Time- 3 hrs

Marks - 40

Practical VII: Question paper model

1. Conduct major experiment **A**. Write Requirement, Procedure, Record the Results with conclusions
Requirement-02, Procedure-03, Experiment settings-03, Record the Results with conclusions -02. Diagram-02 **-12**
2. Comment on experiment **B , C and D.** **-12**
Comments=04 marks
3. Investigate the chemical nature of **E.** **-06**
Positive result=03 marks, Negative result=03 marks
4. Viva **- 05**
5. Record **-05**

B.Sc., Botany

SIXTH SEMESTER

Paper- VIII. (SSF 791). Q.P.Code 15650

PLANT BREEDING, BIOTECHNOLOGY, PLANT TISSUE CULTURE AND EVOLUTION

Theory	
Total theory marks	-50
I A marks for theory	- 10
Total number of teaching hours / sem	- 45hr
Total number of teaching hours / week	- 03hr
Duration of theory exam	-03hr
Practical- Based on theory paper VIII	
Max. marks	-40
Total number practical / week	-01
Duration	-03hr
Duration of practical exam	-03hr

Plant breeding: Principles and objectives : Methods of breeding (Mass selection, single plant or pure line selection, clonal selection, progeny selection, recurrent selection). Significance of plant breeding- increase in yield, resistance to disease and insect pests. Plant breeding in producing new and improved varieties of medicinal plants.

Hybridization: Objectives, steps in hybridization, classification- intraspecific, interspecific and intergeneric crosses with suitable examples.

Propagation: Cutting-root and stem, layering- simple, compound and gooty. Grafting- wedge grafting, approach grafting, Bud grafting.

Evolution: Brief account of theories of evolution – Lamarck, Weismann, Darwin and De-varies, Modern synthetic theories. **- 17hr**

Biotechnology: Introduction: General procedure and scope of genetic engineering (r-DNA technology), PCR technology, production of polyclonal and monoclonal antibodies, general aspects of ELISA technique. Gene mapping.

Application of biotechnology in pharmaceutical, agriculture, Industrial, Environmental field and oil spill (Waste management and sewage treatment) .

DNA finger printing and its application

Transgenic plants- Bt cotton, Tomato, Arabidopsis thaliana **-18hr**

Tissue culture: Aim and scope, Totipotency, callus culture, organogenesis through callus culture, somatic embryogenesis, haploid culture (example anther culture), Protoplast fusion. Application of tissue culture in agriculture and human welfare. **-10 hr**

Practical syllabus

Paper VIII – Project work

Practical syllabus- ANY TOPIC

Time– 3 hrs

Marks - 40

Practical VIII: SCHEME OF VALUATION

- | | |
|--------------------------------------|-----|
| 1. Record – Project work Submission. | -20 |
| 2. Practical proper - Presentation. | -10 |
| 3. Viva | -10 |

B.A: I – SEMESTER QP CODE 10121

PAPER – 1: HISTORY OF INDIA-BRONZE AGE TO 12TH CENTURY AD.

Unit-I	12 hrs
I. The Geographical features and their influence. Himalayan Mountain Ranges – Indo-Gangetic River Basin – Vindhya Satpur Mountain Ranges – Deccan Plateau – Western and Eastern Ghats – Coastal Region	
II. Sources: Archaeological Sources. Exploration and Excavation – Epigraphy- Numismatics, Monuments; Literary Sources: Indegenous : Primary and Secondary Sources, Scientific and Religious Literature. Foreign Accounts : Greek, Chinese and Arab Writers.	
Unit-II	14hrs
I Indus Valley Civilization – Origin, Date, Extent and Sites - Harappa, Mohenjodaro, Lothal, Kalibangan, Dholaveera, Main Characteristic Features, Town Planning, Religion, Script, Art, Economy, Society, causes for decline.	
II Vedic Culture-Early Vedic period-Later Vedic period:-Vedic Literature- Polity, Society, Economy and Religion	
Unit-III	8hrs
Socio-Religious reformation Movement: Buddhism and Jainism – Causes for rise of new religions – Philosophy of Buddha and Mahaveera.	
Unit-IV	24hrs
I The Imperial Mauryas-with special reference to Ashoka’s Welfare State and the Mauryan administration.	
II Cultural Contributions of the Kushans- Religion, Literature, Art and Architecture, Science.	
III. The Age of the Guptas - cultural contributions - Administration, Art, Architecture, Literature, Religion, Science and Technology - Nalanda University	
IV. Vardhanas – Harshavardhana : administration, Art, Architecture, Literature, Religion, Science and Technology - Nalanda University	
V. Sangam Literature, The cultural contributions of the Pallavas, Chola’s- Administration	
Unit-V	2 hrs

Map:

Locate Ten places and write the historical importance of it in one or two sentences.

1st BA 1st Sem
Paper-I Q.P.Code-10121
HISTORY OF INDIA -BRONZE AGE To 12th CENTURY AD

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| 4. PÁ° SAUEi | 16. ÁgÁEÁxÀ | 28. PEÉei |
| 5. zÉÁ®«gÁ | 17. PÁAUÀ | 29. ¥ÁÁÁUÀ |
| 6. gÁE¥Ági | 18. °Á'í | 30. PÁa |
| 7. D®AVÁgi¥ÁgÀ | 19. ÁEÁv | 31. °Á°ÁS° ¥ÁgA |
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| 9. gÁdUÁ°Á | 21. vPP® | 33. GvÁgÁ°ÁÁgÁEgÁ |
| 10. dÁA°PÁ | 22. VgiÉÁgi | 34. UÁAzÁgÀ |
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| 12. PÁ²ÁEÁUÁgÀ | 24. ÁAa | |

B.A: II – SEMESTER QP CODE 10221
PAPER – 2: HISTORY OF INDIA FROM 8TH CENTURY AD TO 1761 AD.

Unit-I	24hrs
I. Background: Arabs and Turks – Arab conquest of Sindh- Consequences of the invasion of Muhammad Gazni and Muhammad Ghori	
II The Delhi Sultanate Alauddin Khilji and his domestic Policy Mohammed-bin-Tugaluk and Firoz Shah Tugaluk and his administrative experiments.	
III. Contribution of the Delhi Sultanate. Art, Architecture and Literature,	
Unit-II	6hrs
Socio-religious movements: Kabir and Nanak-Sufism, Meerabai	
Unit-III	20hrs
The Mughal Dynasty-Babur and the establishment of the Mughal empire- Sher shah suri and his administration-Akbars :- Rajput policy, Religious policy, Aurangazeb :-Deccan Policy, Religious policy, Mughal administration, Revenue System, Mansabdari system, Socio-Economic condition, development of Art, Architecture and Literature.	
Unit-IV	8 hrs
The Marathas – Shivaji and his administration – the Third battle of Panipat 1761. Peshwas : Balaji Vishwanatha, Bajiraya, Balaji Bajiraya,	
Unit-V	2 hrs

Map:

Locate Ten places and write the historical importance of it in one or two sentences.

BOOKS FOR REFERENCE

Athar Ali M	<i>Mughal India</i> (2006) 2012, OUP.
Habib M., and K. A. Nizami (eds.)	<i>The Delhi Sultanate</i> , Vol.5, 2 parts, 1992, People Publishing House, New Delhi.
Irfan Habib	<i>The Agrarian System Mughal India 1526-1707</i> , 1999 2 nd Edition, OUP, New Delhi.
Irfan Habib	<i>Medieval India- A Study of a Civilization</i> , 2007, NBT India.
Jadunath Sarkar	<i>Shivaji and His Times</i> ,(1952) 2010, Oriental Blackswan Pvt. Ltd.
Jadunath Sarkar	<i>A Short History Of Aurangzib</i> , 2012, Orient Blackswan Pvt. Ltd.
Majumdar R.C., (Gen. Ed.)	<i>The History and Culture of the Indian People</i> , Volume No. 6 to 8, Bharatheeya Vidya Bhavan.
Majumdar R.C., Raychaudhuri H.C and Kalinkar Datta	<i>An Advanced History of India</i> (1946) 2010, 4 th Edition, Macmillan Pub. India Ltd.
Percy Brown	<i>Indian Architecture (Islamic Period)</i> , 1964, 4 th Edition, Tarapirevala's Treasure House of Books Bombay.
Satish Chandra	<i>History Of Medieval India</i> ,2007,Oriental Blackswan Pvt. Ltd.
Setumadhavarao S. Pagadi	<i>Shivaji</i> , (1983) 2008, NBT India.
Sharma, S. R.	<i>Mughal Empire in India</i> , 1934) 1973, Lakshmi Narain Agarwal, Agra.
Sharma, S. R.	<i>The Crescent In India –A study of Medieval India</i> , 1954, Lakshmi Narain Agarwal educational Publishers, Agra
Tapan Raychaudhari, and Irfan Habib (eds)	<i>The Cambridge Economic History Of India 1200-1700- Val-1</i> , 2007, Orient Longman-CUP
Tripati, R.P.	<i>Rise and Fall of the Mughal Empire</i> , 1956, Central Book Depot, Allahabad.
U. R. Srinivasan	<i>The Mughal Empire</i> , 2006
U. R. Srinivasan	<i>The Mughal Empire 1526-1707</i>
U. R. Srinivasan	<i>The Mughal Empire 1707-1757</i>
U. R. Srinivasan, D. P. Srinivasan, D. P. Srinivasan, D. P. Srinivasan	<i>The Mughal Empire & Its Successors</i> , 2002

Paper-II Q.P.Code-10221

HISTORY OF INDIA – FROM 13TH CENTURY AD to 1761 AD

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| 1. CfĀgi | 12. zĀ ^a Mj | 23. -Ā ^o ĒĀgi |
| 2. C ^a ĀgiPĒĀmi | 13. fAf | 24. ^a ĀĀ¼Ā |
| 3. C ^a ĀĒvĀ ₃ ġĀ | 14. zĀġĀ PĀĀzġe | 25. eĀĒiġĀġĀ |
| 4. C ^o PĀziĒUġĀ | 15. ġĀĒġĀgi ¹ Qæ | 26. ŚĒĀġĀ ₃ i |
| 5. DUĀæ | 16. ^a ĀĀ ^a ĀġĀ | 27. vĀPĀr |
| 6. OgĀUĀĀzi | 17. ġĀtvĀĀĒĀgi | 28. PĀĒĀ ^a Ā |
| 7. ġĀtġĀmi | 18. ġĀĀiĀUġĀ | 29. ġĀġĀġĀ |
| 8. PĒĒei | 19. ġĀ ^a ĀĀ ₃ ġĀ | 30. ¹ PĀzĀæ |
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| 10. avĒġĀ | 21. ġĀġĀġĀ | 32. ^a ĀġĀUĀĀi |
| 11. zPĀ | 22. ^o ġĀġĀWĀmi | |

PAPER – 3: HISTORY OF MODERN INDIA – PART – I- 1761 TO 1885 AD**Unit-I** **24hrs**

- I. The Advent of Europeans Supremacy – the Portuguese, rise and fall the French and the English , Anglo-French rivalry (Carnatic Wars)
- II. Expansion of British Empire – Battle of Plassy- Buxar and Subsidiary Alliance - Doctrine of lapse
- III. Permanent Land Revenue Settlement. Ryotwari, Mahalwari system Merits & Demerits.

Unit-II **8hrs**

Tribal Movement-Causes-Santalas- Mundas Revolt of 1857 – Causes, Course and effects.

Unit-III **17hrs**

- I Growth of Education – Introduction of English Education – Debate on Education under William Bentinck, H.H. Wilson and Lord Macaulay – Woods Dispatch of 1854, Hunter Commission.
- II Growth of Judicial and Constitutional development under the British rule- Regulating Act of 1773, Pitts India Act of 1784, Charter Acts of 1793, 1813 and 1833. Queen’s Proclamation of 1858.

Unit-IV **9 hrs**

Socio Religious Movements- Bramha Samaj- Arya Samaj – Ramakrishna Mission, Theosophical Society -Aligarh Movement – Jyothiba Phule and Narayanaguru

Unit-V **02 hrs**

Map:

Locate Ten places and write the historical importance of it in one or two sentences.

BOOKS FOR REFERENCE:

Anil Seal	Growth of Economic Nationalism in India
Burtan Stein Edited by David Arnald	A History of India II Edition, wiley Blackwell publication, Delhi 2008
Bipan Chandra	Economic Nationalism in India Colonialism & Nationalism in India Communalism in Modern India
Chaurasia.R.S	History of Modern India From 1707 to 1947 Atlantic publishers & Distributor's Pvt. Ltd. New Delhi 2011
Damodar Dharmanand Kosambi	An Introduction to the study of Indian History Popular prakashana Bombay –Reprint 2008
Dharmakumar	Cambridge economic History of India Vol II
Desai A.R.	Social Background to Indian Nationalism
Edward T & Garratt	History of British rule in India 2 volumes, Publisher-2002
Gopal S.	British Rule in India
Gurubax singh Kapoor	Refresher course in British Rule in India, Surjit publication Delhi 1991
Grover.B.L. Alkamehta	A new look at modern Indian History 1707 to Modern Times, S chand company ltd., New Delhi 2011
Hamsraj	History of Modern India, Surjit Publication Delhi 1991
James Mill	The History of British India 3 volumes, Atlantic Publisher-2002
Joseph J.c	Raja Ram Mohan Roy 1901 Allahabad
Jail M S	The Aligarh movement 2006 New Delhi
Mahajan. V.D	<i>British Rule in India 1707 -1955, S chand & company ltd., Ramnagar, New Delhi-110055-2004</i>
Majumdar.R.C (Gen Edn)	The History and Culture of the Indian People Volume No. 6 to 8, Bharatheeya Vidya Bhavan
Majumdar R.C.	History of Freedom Movement Vol III
Percival Spear	History of India Vol II The oxford History of Modern India 1740-1977

2nd BA 3rd Sem
Paper-III Q.P.Code-10321

HISTORY OF MODERN INDIA - PART-I-1761 TO 1885 AD

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| 1. UĒĀ ^a Ā | 12. PĀ ¹ ASeĀgi | 23. ¥Āē |
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| 5. ¥ĀĀrZĀj | 16. PĀĒĀgĀ | 27. SĀ ¹ ASeĀgi |
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| 9. PĀ PĒĒĒmĒ | 20. Ozi | 31. ZĀzĒĒĀUMĒgĀ |
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B.A: IV – SEMESTER, QP CODE 10421
PAPER – 4: HISTORY OF MODERN INDIA – PART-II

Unit-I	12hrs
I. Factors responsible for the rise of Nationalism in India	
II. National Movement- Indian National Congress – Objectives: -Moderates – Extremists Their Policy and Programmes. Militant Nationalists - Their Programs and Methods.	
Unit-II	16hrs
Gandhian Era – Gandhian Methods – Non Co-operation Movement – Swaraj Party “Civil dis obedience movement – Gandhi -Irven Pact – Round table Conferences – Communal Award – Poona pact – Cripps Proposals – Quit India Movement. Nethaji Subhashachandra Bose and Indian National Army (INA – Cabinet Mission - Independence Act– Partition of India.	
Unit-III	6hrs
Development of Education in India – The University Act of 1904 – Radhakrishna Commission and Kothari Commission-creation of UGC Rajiv Gandhi and his Education Policy.	
Unit-IV	24hrs
I Ambedkar as a reformist, as an Architect of Indian Constitution	
II Independent India – Nehru, foreign policy	
III Political Shift:- socialist thoughts of Lohia and Jayaprakash Narayan .	
IV Indra Gandhi nationalization of banks and mines- emergency 20 points program	
Unit-V	2hrs
Map: Locate Ten places and write the historical importance of it in one or two sentences.	

2nd BA 4th Sem
Paper-IV Q.P.Code-10421
HISTORY OF MODERN INDIA – PART-II-1885 TO 1980 AD

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|---------------------------|-----------------------|---------------------------|
| 1. Dr. A. B. Khanna | 13. J. L. Shrivastava | 25. S. G. Ghoshal |
| 2. D. D. Chatterjee | 14. D. K. Basu | 26. P. V. Rao |
| 3. C. P. Ramaswami Aiyar | 15. P. B. Chatterjee | 27. W. G. Dutt |
| 4. A. N. Sanyal | 16. A. K. Ghosh | 28. A. K. Ghosh |
| 5. A. K. Ghosh | 17. S. K. Chatterjee | 29. Z. K. Ghosh |
| 6. A. K. Ghosh | 18. A. K. Ghosh | 30. P. V. Rao |
| 7. P. B. Chatterjee | 19. E. A. K. Ghosh | 31. C. P. Ramaswami Aiyar |
| 8. A. K. Ghosh | 20. E. A. K. Ghosh | 32. E. A. K. Ghosh |
| 9. Z. K. Ghosh | 21. A. K. Ghosh | 33. A. K. Ghosh |
| 10. C. P. Ramaswami Aiyar | 22. A. K. Ghosh | 34. S. K. Chatterjee |
| 11. D. D. Chatterjee | 23. G. A. K. Ghosh | 35. Z. K. Ghosh |
| 12. A. N. Sanyal | 24. S. K. Chatterjee | |

BA – V – SEMESTER QP CODE 10521
PAPER-5: HISTORY OF MODERN EUROPE FROM 1789-2000AD

Unit-I	12hrs
French Revolution – Causes-National Assembly – Reign of Terror – Effects, Reforms of Napoleon Bonaparte	
Unit-II	16hrs
Rise of Nationalism	
a. Congress of Vienna- 1815	
b. Unification of Italy	
c. Unification of Germany	
Unit-III	20hrs
I. First World War- Causes- Courses-Results	
II. Russian Revolution of 1917- Causes- Courses-Results	
III. Second World War- Causes- Courses-Results	
Unit-IV	12hrs
I UNO: Objectives, Achievements and Limitations	
II Cold War and Disintegrations of USSR – Formation of European Union	
Unit-V	2hrs

Map:

Locate ten places and write the historical importance of it in one or two sentences.

BOOKS FOR REFERENCE:

Agarwal	History of Modern Europe since 1789 – Published by S . Chandh and Company Limited, New Delhi. Published in 1959 reprint in 2007
Albert Soboul	Understanding the French Revolution
Carcton J H hayes	Modern Europe to 1870 surjeet publication 1982
Edward M Nell Burns	Western Civilization:Its History & Culture
Ford M.	Europe – 1880 – 1918
Fisher H. A .L	Modern Europe Since 1789 – , published by Lakshminarayan Agarwal , Agra 1998
Gottschalk and Lack	Rise of Modern Europe
Gottschalk and Lack	Europe since Napoleon The Struggle for Mastery over Europe
Grant and Temperly	Europe in the 19 th and 20 th Centuries – Published by Adam and Charles Blak 1962
Hazen C. D	Modern Europe Upto 1945 – , S . Chandh and Company Limited, New Delhi. Published in 1956 , reprint 1994
Hayes.C.J.H	Comtemporary Europe since 1870, Surjit Publication New Delhi 2012
Kettelby C.D.M	History of Modern times
Khurana.K.L	Modern Europe –, published by Lakshminarayan Agarwal ,Agra 1998
Lipson	Europe in the 19 th and 20 th Centuries
Liption E	European in the 19 th and 20 th Centuries – Published by Adam and Charles Blak 1962
Tony judt	post war a history of Europe since 1945
Wallbank and Taylor	Civilization past Vol III
William M Mac Neill	Rise of Modern Europe
«DATA MET ZN, vASqA	««ZAI DATA ^a NUKA , ¥BA GAUA PEIQA «.«. °A; 1995
G ^a IA ^a °A±GA	AIAG ^a EA; EA Ew ^o A, 2 ^a EUJ ¥BA±EA avEUD 2013
G ^a IA±APGA	AIAG ^a EA; EA Ew ^o A, 2 ^a AYÖ ¥BA±EA 2 ^a FEUA 2005

3rd BA 5th Sem

Paper-V Q.P.Code-10521

HISTORY OF MODERN EUROPE FROM 1789-2000 AD

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| 3. $\text{P}^{\text{E}}\text{O}^{\text{P}}\text{A}$ | 15. $\text{E}^{\text{A}}\text{A}^{\text{R}}\text{O}$ | 27. $\text{P}^{\text{A}}\text{A}^{\text{I}}\text{I}$ |
| 4. $\text{A}^{\text{A}}\text{A}^{\text{O}}$ | 16. $\text{A}^{\text{A}}\text{Q}^{\text{E}}\text{I}$ | 28. $\text{A}^{\text{A}}\text{Q}^{\text{E}}\text{I}$ |
| 5. $\text{S}^{\text{O}}\text{A}^{\text{O}}\text{E}^{\text{I}}$ | 17. $\text{A}^{\text{A}}\text{R}^{\text{A}}\text{P}^{\text{I}}$ | 29. $\text{A}^{\text{R}}\text{A}^{\text{O}}\text{A}^{\text{I}}\text{A}$ |
| 6. J^{A} | 18. $\text{E}^{\text{E}}\text{I}^{\text{U}}\text{A}^{\text{A}}\text{P}^{\text{I}}$ | 30. $\text{A}^{\text{A}}\text{P}^{\text{A}}$ |
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| 8. $\text{A}^{\text{A}}\text{E}^{\text{A}}\text{B}$ | 20. $\text{A}^{\text{A}}\text{A}^{\text{E}}\text{I}$ | 32. $\text{I}^{\text{A}}\text{E}^{\text{I}}\text{E}^{\text{I}}$ |
| 9. $\text{D}^{\text{E}}\text{A}^{\text{A}}\text{I}^{\text{E}}\text{A}$ | 21. $\text{E}^{\text{A}}\text{N}^{\text{A}}\text{I}$ | 33. $\text{A}^{\text{A}}\text{J}$ |
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| 11. $\text{D}^{\text{A}}\text{J}$ | 23. $\text{G}^{\text{E}}\text{A}^{\text{A}}\text{I}$ | 35. $\text{P}^{\text{O}}\text{A}^{\text{I}}\text{A}$ |
| 12. $\text{J}^{\text{P}}\text{I}^{\text{A}}\text{Z}^{\text{A}}\text{E}^{\text{I}}$ | 24. $\text{A}^{\text{A}}\text{E}^{\text{I}}\text{U}^{\text{A}}\text{P}^{\text{I}}$ | 36. $\text{A}^{\text{I}}\text{A}^{\text{A}}$ |

BA: V – SEMESTER QP CODE 10522

PAPER – 6: HISTORY OF KARNATAKA FROM EARLIEST PERIOD UP TO 1750

Unit-I

11 hrs

- I. Geographical Features and its influence – Coastal region- Malenadu region- Northern Plateau- Southern plateau, Sources; archaeological and literacy.
- II. Pre History of Karnataka – Paleolithic, Mesolithic, Neolithic, Megalithic period

Unit-II

24hrs

- I. Kadambas of Banavasi – Life & Achievements of Mayura Varma. Badami Chalukiyas Life & Achievements of - Pulikeshi II – Rashtrakutas : Life & Achievements of Amoghavarsha, Administration, Art and Architecture, Religion and Literature.
- II. Chalukyas of Kalyana and Hoysalas: – Life and achievements of Vikramaditya IV, Vishnuvardhana – Administration, Art and Architecture, Religion.

Unit-III

18hrs

- I Vijayanagara Empire – Life and Achievements of Krishna Devaraya – Battle of 1565 – Administration, Art and Architecture, Literature, Religion, Trade and Commerce.
- II Bahamanis and Adil Shahi's : Muhamad Gawan:- Contribution to Culture-Art and Architecture-Religion and Literature

Unit- IV

7hrs

- I The Keladi & Chitradurga Nayakas – Contribution of the Shivappa Nayaka & Keladi Chennamma Madakari Nayaka 5th & his political achievements.

Unit- V

2hrs

Map:

Locate ten places and write the historical importance of it in one or two sentences.

Special Note: The Teachers are expected to take the Students to nearby historical places.

BOOKS FOR REFERENCE:

Altekar	Rastrakuta's and their times
Desai P.B.	History of Karnataka
Divakar R.R	Karnataka through the Ages
Nilakanta Shatry K.A	History of South India, Madras
Ramakrishna and Srinivasa Murthy	History of Karnataka
Ranganath	Geography of Karnataka, Mysore Book house & Vidhya Bhavan, Mysore 2018
Sheik Ali B.	History of the Western Ganga's of Talakadu
Yazdani	Early History of Deccan
ಪ್ರಾಚೀನ ಕರ್ನಾಟಕ ಇತಿಹಾಸ	ಪ್ರಾಚೀನ ಕರ್ನಾಟಕ ಇತಿಹಾಸ - 7, ಜಿ. 1.1. ಏಷಿಯಾಟಿಕ್ ಸೊಸೈಟಿ, ಬೆಂಗಳೂರು
ಪ್ರಾಚೀನ ಕರ್ನಾಟಕ ಇತಿಹಾಸ	ಪ್ರಾಚೀನ ಕರ್ನಾಟಕ ಇತಿಹಾಸ
ಗಾಂಧೀಯರ ಕರ್ನಾಟಕ ಇತಿಹಾಸ	ಪ್ರಾಚೀನ ಕರ್ನಾಟಕ ಇತಿಹಾಸ ಏಷಿಯಾಟಿಕ್ ಸೊಸೈಟಿ 2007
ಕರ್ನಾಟಕ ಇತಿಹಾಸ	ಪ್ರಾಚೀನ ಕರ್ನಾಟಕ ಇತಿಹಾಸ ಏಷಿಯಾಟಿಕ್ ಸೊಸೈಟಿ 2012

3rd BA 5th Sem
Paper-VI Q.P.Code-10522
HISTORY OF KARNATAKA FROM EARLIEST UPTO 1750

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| 1. ಸೇರಾ | 13. ಕೆರಳಿ | 23. ಕೆರಳಿ |
| 2. ಆಳಾ | 14. ಕೆರಳಿ | 24. ಕೆರಳಿ |
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| 4. ಕೆರಳಿ | 16. ಕೆರಳಿ | 26. ಕೆರಳಿ |
| 5. ಕೆರಳಿ | 17. ಕೆರಳಿ | 27. ಕೆರಳಿ |
| 6. ಕೆರಳಿ | 18. ಕೆರಳಿ | 28. ಕೆರಳಿ |
| 7. ಕೆರಳಿ | 19. ಕೆರಳಿ | 29. ಕೆರಳಿ |
| 8. ಕೆರಳಿ | 20. ಕೆರಳಿ | 30. ಕೆರಳಿ |
| 9. ಕೆರಳಿ | 21. ಕೆರಳಿ | 31. ಕೆರಳಿ |
| 10. ಕೆರಳಿ | 22. ಕೆರಳಿ | 32. ಕೆರಳಿ |
| 11. ಕೆರಳಿ | 23. ಕೆರಳಿ | 33. ಕೆರಳಿ |

BA: VI – SEMESTER QP CODE 10621

PAPER – 7: HISTORY OF KARNATAKA FROM – 1750AD – 1985 AD

Unit- I 16hrs

- I Rise of Hyder Ali and Tippu Sultan –Anglo – Mysore Wars – Administration of Tippu Sultan.
- II The Wodeyars – Krishnaraja Wodeyar III, Diwan Poornaiah, Nagara revolt of 1831

Unit- II 12hrs

- I Commissioners Rule (1831 – 1881) – Mark Cubbon and L.B. Bowring
- II Rendition – Mysore under Divans – Rangacharlu – Sheshadri Iyer – Sir.M. Vishveshwaraya – Mirza Ismail

Unit- III 26hr

- I Armed Resistance against the British
- II National Movement in Karnataka – Indian National Congress – Tilak and his influence – Non – Co-Operation Movement – Belagam Session of 1924 – Salt Movement – Mysore Congress – Shivapura Flag Movement – Quit India Movement, Isuru tragedy
- III Backward Class and Depressed Class Movements – Prajamitra Mandali – Miller Commission L.G. Hawanoor Commission.
- IV Land reforms in Karnatak and Peasant Movement: Kagodu Satyagraha – Land reforms Acts of 1962 and 1974 – Karnataka Rajya Raita Sangha

Unit- IV 06hrs

The Unification of Karnataka

Unit- V. 02hrs

Map:

Locate Ten places and write the historical importance of it in one or two sentences.

3rd BA 6th Sem
Paper-VII Q.P.Code-10621
HISTORY OF KARNATAKA FROM -1750 AD-1985 AD

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|----------------|----------------|----------------|
| 1. ಸರ್ವಜನಿಕ | 12. ಏಕೋಪಗಾ | 23. ಕಾರ್ತವೀರ್ಯ |
| 2. ಕಾರುಣ್ಯ | 13. ಲೋಕೋಪಶಾಂತಿ | 24. ಫಲಗಾ |
| 3. ಜನಾಧಿಪತ್ಯ | 14. ಲೋಕೋಪಶಾಂತಿ | 25. ಜಗದ್ಗುಣ |
| 4. ವ್ಯಾಜ್ಞಾನಿಕ | 15. ಅಧಿಪತ್ಯ | 26. ಲೋಕೋಪಶಾಂತಿ |
| 5. ಲೋಕೋಪಶಾಂತಿ | 16. ಅಧಿಪತ್ಯ | 27. ಜಗದ್ಗುಣ |
| 6. ಲೋಕೋಪಶಾಂತಿ | 17. ಲೋಕೋಪಶಾಂತಿ | 28. ಲೋಕೋಪಶಾಂತಿ |
| 7. ಜಗದ್ಗುಣ | 18. ಅಧಿಪತ್ಯ | 29. ಪಾದಗುಣ |
| 8. ಅಧಿಪತ್ಯ | 19. ಅಧಿಪತ್ಯ | 30. ಪಾದಗುಣ |
| 9. ಲೋಕೋಪಶಾಂತಿ | 20. ಲೋಕೋಪಶಾಂತಿ | 31. ಜಗದ್ಗುಣ |
| 10. ಅಧಿಪತ್ಯ | 21. ಅಧಿಪತ್ಯ | 32. ಅಧಿಪತ್ಯ |
| 11. ಲೋಕೋಪಶಾಂತಿ | 22. ಲೋಕೋಪಶಾಂತಿ | |

BA: VI – SEMESTER QP CODE 10622
PAPER – 8: HISTORY OF MODERN ASIA FROM – 1900 TO 1985

Unit- I **06hrs**

Introduction: Rise of Colonialism - Reasons for its growth in Asia.

Unit- II **38hrs**

FAR EAST ASIA

CHINA – Historical background – Boxer rebellion 1900 – The revolution of 1911 – Dr. Sun Yat – Sen and his Principles – Achievements of Nationalist Government. 21demands- The Period of reaction – 1912 – 1918 – Yuan Shikai – Peoples Republic of China – Domestic and Foreign Policy of Maotse Tung.

JAPAN – Emergence of Japan as a world power – Sino – Japanese Conflicts – Anglo – Japanese Alliances – Russo – Japanese war – Washington Conference – Japan and World Wars – Reconstruction of Japan (SCAP)- Treaty of San-Francisco

Unit- III **14hrs**

WEST ASIA

ARABIA: National Movement – The rise of Saudi – The Wahabi Movement- OPEC and Oil Diplomacy – USA and UK

IRAN ; Reforms of Rezashah Pahlavi for modernization of Iran Mohammed Mossadic & Nationalization of Anglo Iran Oil Company

ISRAEL: Creation of Israel – Palestine Question

Unit- IV **02hrs**

South Asian Association for Regional Co-operation (SAARC) – Aims and Objectives

Unit- V **02hrs**

Map:

Locate ten places and write the historical importance of it in one or two sentences.

BOOKS FOR REFERENCE:

Allen George	A Short Economic History of Modern Japan (London, Allen Unwin, 1946).
Beasley W.G.	The Modern History of Japan (London, Weidenfeld and Nicolson, 1963).
Beckmann George M	Modernization of China and Japan (Harper and Row, 1962).
Beckmann George M	The Making of Meiji Constitution (Greenwood, 1975).
Bianco Lucian	Origins of the Chinese Revolution, 1915-1949 (London, OUP, 1971).
Jansen Y.B.	The Cambridge History of Japan Vols V and VI, (Cambridge, 1988).
Fairbank J.K	The Cambridge History of China Vol X edited by. (Cambridge, 1978)
Chesneaux Jean et al	China from Opium War to 1911 Revolution (Sussex, Harvester Press, 1976).
Chesneaux Jean et al	China from the 1911 Revolution to Liberation (Delhi, Khosla Publishing, 1986). Chesneaux Jean et al – Peasant Revolts in China, 1840-1949 (London, Thames and Hudson, 1973). Chen Jerome – Mao Tse Tung and the Chinese Revolution (Cambridge, 1970).
Fairbank John K, et al	East Asia: The Modern Transformation (London, George Allen & Unwin, 1965). Fitzgerald C.P. – Birth of Communist China (Harmondsworth, Penguin Books, 1964).
Gordon Andrew	A Modern History of Japan: From Tokugawa Times to Present (New York, 2003). Halliday Jon – A Political History of Japanese Capitalism (New York, Pantheon, 1975).
Hsu C.Y. Immanuel	The Rise of Modern China (O.U.P., 1989).
Johnson Chalmers A	Peasant Nationalism and Communist Power: The Emergence Of Red China, 1937- 1945 (California, Stanford University Press, 1962).
Jon Livingston et al	The Japan Reader Vol. – Imperial Japan 1800-1945 (Pantheon, 1974). Norman E.H. – Japan’s Emergence as a Modern State (New York, 1946).
Peffer Nathaniel	The Far East: A Modern History (Ann Arbor, University of Michigan Press, 1950). Purcell Victor – The Boxer Uprising: A Background Study (Cambridge, 1963).
Pyle Kenneth B	The Making of Modern Japan
Sansom George	The Western World and Japan (London Crescent Press, 1950). Schurmann Franz and Orville Schell (eds) China Readings 2 Vols (Imperial Ch; Republican Ch.). Storry Richard – A History of Modern Japan (London, O.U.P. 1965).
Tse Tung Chow	The May Fourth Movement: Intellectual Revolution in Modern China (California, Stanford University Press, 1967).
Vinacke H	A History of the Far East in Modern times (London, George Allen and Unwin, 6th Ed, 1960). Wright Mary C – China in Revolution: The First Phase 1900-1913 (Yale, 1968).
Yanaga Chitoshi	Japan since Perry (Greenwood, 1975).
Field House G K	The Colonial Empire
Freorge Mc Tumankebin	Nationalism & Revolution in Indonesia Colonialism an Introduction 1870 – 1945
Girald. D	The Struggle for Asia 1820 – 1914
Hall DGE	A History of South Asia

Hoang Van Hi	From Colonialism to Communism: A Case Study of North Vietnam.
Jeffery Robin	Asia: The Winning of Independence
Kem.T	Theories of Imperialism
Mourice Meisuer	Maos China
Panikkar K M	Asia and the Western Dominance
Show Edger	Red Star over China
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3rd BA 6th Sem
Paper-VIII Q.P.Code-10622
HISTORY OF MODERN ASIA FROM -1900 TO 1985 AD

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| 1. ΕΑΕΐΟΑΥΐ | 13. mΐΕΑΐQΑΐΐΕΑΐ | 25. qPΐΑΐ,ΐ,ΐ |
| 2. »gΐΕΑΐ ² aΐΑ | 14. °ΑΐΐΕΑΐ ΑΑΥΐ | 26. gΑΥΐΕΕΐ |
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| 5. aΐPΐΑΐ | 17. PΐΐAqΐ | 29. ¹ AUMΐgΐ |
| 6. °ΑΑΥΐPΐΑΑΥΐ | 18. ΕΑΥΐ, ΑQ | 30. aΐΑαΐ-Α |
| 7. ±ΑΑWΐΑΐΐΐ | 19. ¥ΑΐΐΕΑΐΐ,Α | 31. ΑΐΐΕΑΐΐΕ°ΑΐΑ |
| 8. aΐΑΐPΐEΐ | 20. mΐΐ-C«Αΐΐ | 32. PΐΑmΐE |
| 9. aΐΑΐ-aΐCΐ,Αΐΐ | 21. PΐΑΐEΐ | |
| 10. vPΐαΐ | 22. ¥ΐΕΑΐmiΐ Dxΐgΐ | |
| 11. aΐΑΐCΐΕΑ | 23. qΐgΐEΐ | |
| 12. ΑQΑΥΐ | 24. PΐΑΐEΐ | |

Proceedings of the UG BOS Meeting

Proceedings of the meeting of the BOS (UG) in Economics, met on 27-12-2016 at 11.30 AM in the Chairman's Chamber, Department of Studies in Economics, Kuvempu University, Jnanasahyadri, Shankaraghatta.

At the outset, the Chairman welcomed all the members of the Board for the meeting.

The Board approved the B.A. Syllabus (Ist, IInd and IIIrd year) for the academic year 2017-18.

At the end, the chairman thanked all the members for their active involvement in the deliberations and for their co-operation in conducting the meeting

Members Present

1. Dr. S.Mahendra Kumar
2. Dr. Devaraj.P
3. Dr. Shashirekha. K.R

[Signature] 27/12/16

[Signature] 27/12/16

[Signature] 27/12/16

Members Absent

1. Dr. M. Chowdegowda

Date: 27-12-2016

[Signature] S.N. 27/12/16
Chairman

BOS in Economics (UG)
Dept. of Economics
Kuvempu University

CBCS , UG Economics Syllabus – 2016

KUVEMPU UNIVERSITY

SEMESTER	SUBJECT	Hours allotted
I	Managerial Economics	90 Hours
II	Economics of Markets	90 Hours
III	Macro Economics	90 Hours
IV	Money and Financial Markets	90 Hours
V	compulsory Economics of <i>Growth and Development</i> Paper-v	80 Hours
	optional International Business Environment Paper-vi	80 Hours
	optional Rural Development and Co-operation Paper-vi	80 Hours
	optional Karnataka Economy Paper-vi	80 Hours
	optional Tourism Economics Paper -vi	80 Hours
VI	Compulsory Human Resource Development Paper- vii	80 Hours
	optional Indian Economic Environment Paper-viii	80 Hours
	optional Public Economics Paper-viii	80 Hours
	optional Research Methodology Paper -viii	80 Hours

I. B.A. - I SEMESTER

SAA - 240

MANAGERIAL ECONOMICS

(Compulsory paper)

Objective:

To provide clear relationship between knowledge of economics and applications in management Decision-making.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module-1: Nature and Scope of Managerial Economics:

Meaning characteristics, scope and subject matter- relationship with other discipline - decision making and forward planning.

10 Hours

Module-2: Fundamental principles of managerial Economics:

Opportunity cost principle -incremental principle, principle of time perspective, discounting principle and equi-marginal principle.

15 Hours

Module -3: Demand Analysis:

Meaning and definition of demand, determinants of demand, law of demand, exception to the law of demand, elasticity of demand.

15 Hours

Module -4: Demand Forecasting:

Meaning and definitions- long run and short-run demand forecasting – objectives and need for demand forecasting - methods of demand forecasting; problems on least square method - demand forecasting for new product - criteria of good forecasting methods.

20 Hours

Module -5: Cost and Revenue Analysis:

Meaning of cost, money Cost, real Cost, opportunity cost, implicit and explicit cost, short-run costs, total cost, fixed cost, and economies of scale. Revenue – meaning – total revenue, average revenue and marginal revenue- Break-even analysis - break-even chart with problems.

15 Hours

Module-6: Pricing Policy:

Cost plus pricing – new product pricing; penetration, skimming pricing, price bidding, multi product pricing, transfer pricing. Capital Budgeting: Meaning, objectives, prerequisites, components.

15 Hours

Reference books:

1. Joel Dean (2012), Managerial Economics, PHI Publisher, New Delhi
2. Ahuja, H L (2014) Managerial Economics: S Chand Publisher, New Delhi
3. Gupta (2010), Tata McGraw Hill Publisher, New Delhi
4. Mithani, D M (2014), Managerial Economics, Himalaya Publishing House, Mumbai
5. Yogesh Maheshwari (2010), Managerial Economics PHI Publisher, New Delhi
6. Atmanand (2008), Managerial Economics, Excel Book Publisher, Bangalore
7. Trivedi, M L (2009), Managerial Economics, Tata McGraw Hill Publisher, New Delhi
8. Sharma R (2011), Managerial Economics, Lakshmi Narain Agarwal, Agra
9. Dr.H.R.Krishnaya Gowda, Managerial Economics, Vidhya Nidhi Publisher, Gadag

I B.A. - II SEMESTER

SAB - 240

ECONOMICS OF MARKETS

(Compulsory Paper)

Objective:

1. To enable the students to understand the concepts of Cost and Revenue their significance in price determination
2. To create an opportunity to understand the working of various forms of market and their practicability
3. To develop analytical skills and graphical presentation.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

MODULE 1: PRODUCTION ANALYSIS

Production Function -- cost of production -- money cost, real cost explicit cost, variable cost, TC, T.F.C, TVC, AC, AFC, AVC MC, short run and long run cost curves -- revenue, TR, AR AND MR. Illustrations of cost and revenue calculations. 15 Hours

MODULE 2: PRODUCER'S EQUILIBRIUM

Laws of Variable Proportions -- laws of returns to scale, producers' equilibrium -- optimization of production -- economies and diseconomies of scale- Break-Even Analysis- meaning, assumptions and chart 20 Hours

MODULE 3: PRICE DETERMINATION

Meaning of markets --types of market -- Role of time elements, Supply and demand interaction determinants -- Distribution between firm and industry - short period and long period equilibrium

20 Hours

MODULE - 4

Perfect competition - features - price and output determination in short period and long period
monopoly - features - price and output determination - in short period and long period - price
discrimination - conditions - price and output determination - monopolistic competition
features - price and output determination in short period and long period - oligopoly - features
indeterminateness of demand - price determination

20 Hours

MODULE 5: FACTOR PRICING

Marginal productivity theory of distribution - Ricardian theory of rent - concept of quasi - rent
and transfer earnings, wages - Subsistence, theory, wage fund theory and modern theory
Classical theory of interest - Loanable fund theory - Liquidity preference theory

15 Hours

References:

1. Ahuja, H L (2012), Modern Microeconomics, S Chand Publisher New Delhi
2. Jhingan, M L (2010), Micro Economic Theory, Vrinda Publication Pvt. Ltd Delhi
3. John Kennedy (2010), Micro Economics, Himalaya Publisher, Mumbai
4. Dewett, K K (2005), Modern Economic Theory, S Chand Publisher, New Delhi
5. P N Chopra (2011), Principles of Economics, Kalyani publishers, Ludhiana
6. Agarwal, H S (2014), Micro Economic Theory, Ane Book Pvt. Ltd, New Delhi
7. ಎಚ್.ಎಸ್. (2015), ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ - 1, ಸಪ್ನಾ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು
8. ಎಚ್.ಎಸ್. (2015), ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ - 2, ಸಪ್ನಾ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು
9. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2014), ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ - 1, ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ, ಗದಗ
10. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2014), ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ - 2, ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ, ಗದಗ
11. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2012), ಭಾರತ ಸೂಕ್ಷ್ಮ ಆರ್ಥಿಕ ಸಿದ್ಧಾಂತ, ಸ್ವಂದನ ಪ್ರಕಾಶನ, ಬೆಂಗಳೂರು

SAC – 240

II.B.A - III SEMESTER
MACRO ECONOMIC ANALYSIS
(Compulsory paper)

Objectives:

1. To enable the student to learn the well formulated principles of macroeconomics.
2. To help the student to understand the integrated working of a modern economy.
3. To provide the basis for the study of other branches of economics.
4. To help the student to appreciate the role of government in the economic functioning of a nation.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module 1: Macro Economics and National Income Accounting

Macro Economics - meaning - types - uses - circular flow of income and wealth - National Income: meaning - definition - concepts of national income - GDP - GNP - NNP - PI - DPI - PCI (Real and Nominal) - methods of calculation - uses - difficulties in the measurement

15 Hours

Module 2: Determination of Employment

Classical theory of employment - Say's law of market - wage price flexibility - Keynesian theory of employment - effective demand - aggregate supply of function - aggregate demand function - wage price rigidity - Consumption function : psychological law of consumption - Average propensity to consume (APC) Marginal propensity to consume (MPC) - determinants of propensity to consume - Investment function - types of investment - marginal efficiency of capital - determinants - Multiplier and Accelerator - comparison of classical and Keynesian theory.

30 Hours

Module 3: Theory of Prices

Module 3: Theory of Prices

Inflation - meaning - types - causes - effects - remedies - inflationary gap inflation and unemployment - Phillips curve : short run and long run - Deflation : meaning - causes - effects - remedies - deflationary gap.

15 Hours

Module 4: Theory of Business Cycles

Trade cycles - meaning - curves - types - Features - Phases - theories of trade cycles - Hayek, Hicks, Schumpeter, Kaldar - measures to control trade cycles

15 Hours

Module 5: Macro Economic Policy Targets and Instruments

Fiscal policy - meaning - objectives - instruments - functional fiscal policy - fiscal policy for eradication of unemployment and income inequalities. Monetary policy - meaning - objectives - tools of monetary policy - interplay of both policies

15 Hours

References:

1. Puri, V K & Misra, S K (2004), Modern Macro Economic Theory, Himalaya Publisher, Mumbai
2. Gupta, G S (2004), Macro Economics theory and applications, Tata Mcgraw Hill Publisher, New Delhi
3. H R K (2004), Macro Economics, Sapna Book House, Bangalore
4. Sampat Mukherjee (2014), Macro Economics, a global text, New Central Book Agency, London
5. Somashekar, Ne Thi (2005), Modern Macro Economic Theory, Anmol Publication pvt.Ltd, New Delhi
6. Suman Kalyan Chakrabarty (2010), Macro Economics, Himalaya Publisher, Mumbai
7. ಎಚ್‌ಆರ್‌ಕೆ (2015), ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, ಸಪ್ನಾ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು
8. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2014), ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, ಸ್ಪಂದನ ಪ್ರಕಾಶನ, ಬೆಂಗಳೂರು
9. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2014), ಭೌತಿಕ ಸಮಗ್ರ ಅರ್ಥಿಕ ಸಿದ್ಧಾಂತ, ಸ್ಪಂದನ ಪ್ರಕಾಶನ, ಬೆಂಗಳೂರು
10. ರಾಜಣ್ಣ, ಕೆ ಎ (2014) ಸಮಗ್ರ ಅರ್ಥಿಕ ವಿಶ್ಲೇಷಣೆ, ಕಾಲೇಜ್ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು

SAD-240

MONEY AND FINANCIAL MARKETS

(Compulsory Paper)

objectives:

1. To enable the students to learn the various concepts involved in money banking.
2. To help student to understand modern money, capital market and banking system.
3. To provide the basis for acquiring the knowledge of economic system in country.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

MODULE 1: Nature and functions of money

Meaning-forms of money-functions of money-Gresham's law- Role of money in modern economy, monetary standards - features, merits and demerits- principles and methods of note issue - Monetization and Demonetization

15 Hours

MODULE 2: Supply and Demand for money

The supply of money : determinants of money supply - changes in the supply of money - the velocity of circulation of money - changes in velocity of circulation - demand for money : classical - Keynesian and post - Keynesian developments - equality of supply and demand for money.

20 Hours

MODULE 3: Commercial Banking

Role of commercial banks in a developing economy- structure of banking system- functions of commercial bank-balance Sheet-credit creation-portfolio management-Banking practices and services: Cheques-drafts-bills-passbook-ATM-E-banking-KYC-RTGS-debit and credit cards-electronic fund transfer-MICR-IFSC- Money market: Composition- characteristics-working of money market-capital market

20 Hours

MODULE 4: Central Banking and policy

Functions-credit control-Monetary policy-objectives-instruments of monetary policy-uses of monetary policy-limitations-monetary policy lags-effectiveness of monetary policy in India.

20 Hours

MODULE 5: Financial Institutions

Meaning, Role Of NBFF'S - IFCI, ICICI, IDBI, SIDBI

15 Hours

References:

1. Kulkarni, A B N & Kalkundrikar, A B (2011), Monetary Economics, S Chand Publisher, New Delhi
2. Mithani, D M (2009), Money Banking, International Trade and Public Finance, Himalaya Publisher, Mumbai
3. Mithani, D M (2006), Public Finance Theory and Practice, Himalaya Publisher, Mumbai
4. Jhingan, M L (2010), Monetary Economics, Vrinda Publication Pvt, Ltd, Delhi
5. ಎಚ್.ಎಸ್. (2015), ಹಣ ಮತ್ತು ಬ್ಯಾಂಕೋದ್ಯಮ, ಸಪ್ತ ಬುಕ್ ಹೌಸ, ಬೆಂಗಳೂರು
6. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2014), ಹಣ ಮತ್ತು ಬ್ಯಾಂಕೋದ್ಯಮ, ವಿದ್ಯಾವಿಧಿ ಪ್ರಕಾಶನ, ಗದಗ
7. ಕಾನ್ಯಾ, ಕೆ.ಎ (2015), ಹಣ ಮತ್ತು ಬ್ಯಾಂಕೋದ್ಯಮ, ಕಾರ್ಲೆಟ್ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು
8. ಎಚ್.ಎಸ್. (2015), ಹಣದ ಅರ್ಥಶಾಸ್ತ್ರ, ಸಪ್ತ ಬುಕ್ ಹೌಸ, ಬೆಂಗಳೂರು
9. ಶುನಿವಾ, ಕೆ ಡಿ (2008), ಹಣ ಮತ್ತು ಹಣಕಾಸಿನ ವ್ಯವಸ್ಥೆ, ವಿದ್ಯಾವಾಹಿನಿ, ಹುಬ್ಬಳ್ಳಿ

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III. B.A. - V SEMESTER

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240 ECONOMICS OF GROWTH AND DEVELOPMENT- PAPER VI
(Compulsory Paper)

objectives:

1. To enable the students to learn the fundamental concepts of development economics.
2. To enable the students to develop a logical and analytical view of issues in today's world.
3. To enable the students to relate learning to reading the case of development issues like poverty, unemployment, imbalances etc.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module 1 ECONOMIC DEVELOPMENT AND ECONOMIC GROWTH

Meaning definition - Distinction between growth and development, Human Development, Human Development Index, HDI measures HDI Progress In India, Gender Development Index, Sen's capabilities approach, environmental sustainability and development,

15 Hours

Module 2-CLASSICAL AND NEO CLASSICAL THEORIES OF DEVELOPMENT

Introduction-Rostow's Stages of Economic Growth - Criticism of the stages of Economic Growth -Harrod-Domar Growth Model- Assumptions of the Models-The Domar Model -The Harrod Model ,the warranted Rate of Growth, Long Run Disequilibria, The Natural Rate of Growth, Economic model of unlimited supplies of labour , Solow's Neoclassical Growth Model.

20 Hours

MODULE-3 GROWTH STRATEGIES AND GROWTH MODELS

Introduction - Adam Smith - David Ricardo - Karl Marx - Schumpeter - Rostow - Gunnar Myrdal - Big Push theory - Critical Minimum Efforts Thesis - Strategies of growth : balanced and unbalanced growth.

15 Hours

Module 4 -POVERTY MEASURES AND POLICY OPTIONS

Introduction, Concepts of Poverty, Absolute Poverty, Relative Poverty, Measurement of Poverty, Human Poverty Index, Alternative Poverty functional impact of poverty –poverty traps – credit, nutrition and labour market – poverty and household allocation of resources., Measurement of Inequality – meanings and Methods of Measurement, Economic Growth and Income Inequality- Impact of Inequality on Development

20 Hours

Module 5- DEMOGRAPHIC TRANSITION AND FERTILITY

Introduction, Theory of Demographic Transition, Causes of High Fertility in Developing Countries, The Microeconomic Household Theory of Fertility, Consequences of High Fertility, Policy Initiatives taken by Developing countries to Control Population.

10 Hours

References:

1. Jhingan, M L (2010), The Economics of Development and Planning, Vrinda Publisher, New Delhi
2. Agrawal, A N (2010), Indian Economy Problems of Development & Planning, New Age International Publisher, New Delhi
3. ಬಸವಾ, ಕೆ ಡಿ (2010), ಭಾರತದ ಆರ್ಥಿಕಾಭಿವೃದ್ಧಿ ಅರ್ಥಶಾಸ್ತ್ರ, ವಿದ್ಯಾವಾಹಿನಿ-ಪ್ರಕಾಶನ, ಹುಬ್ಬಳ್ಳಿ
4. ಎಚ್‌ಆರ್‌ಎಸ್ (2015), ಅಭಿವೃದ್ಧಿ ಅರ್ಥಶಾಸ್ತ್ರ, ಸಪ್ತ ಬುಕ್ ಹೌಸ, ಬೆಂಗಳೂರು
5. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2014), ಅಭಿವೃದ್ಧಿ ಅರ್ಥಶಾಸ್ತ್ರ, ವಿದ್ಯಾವಿನಿಧಿ ಪ್ರಕಾಶನ, ಗದಗ

III. B.A. - V SEMESTER

SAE-241 INTERNATIONAL BUSINESS ENVIRONMENT- PAPER-V (OPTIONAL PAPER)

Objectives:

1. To enable the students to have an understanding of Various Concepts of IBE
2. To create an opportunity to understand the working of various International Financial Organisations and financial system
3. To develop skills in students to be able to apply theory by understanding various theories.
4. To enable the student to apply the knowledge gained from the study of micro and macro economics in the field of international economics.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module 1: International Trade Business Environment

Meaning and definitions- internal and international trade - Significance and nature of business environment - elements of environment - Global environment - Merits and demerits-

15 Hours

Module 2: Economic Environment of Business in India

Economic Environment of Business. Significance and elements of economic environment - economic systems and business environment - economics planning (NITI Aayog) in India - Government policies - Industrial policies - Monetary and Fiscal Policies, Public Sector and economic development

20 Hours

Module 3: Balance of Payments and Exchange Rate:

Meaning - balance of trade and balance of payments - structure of balance of payments - causes for disequilibrium in the balance of payments - measures for correcting disequilibrium - foreign exchange: meaning - determination of exchange rate - fixed and flexible exchange rate - merits and demerits - purchasing power parity theory - Demand and supply theory.

20 Hours

Module 4: International Monetary Institutions and Economic Environment

International and Technological environment, multinational corporations – Foreign Collaboration in Indian Business –Foreign direct investment – Merits and Demerits with special reference to India. FIIs – International economic institutions, IMF, IBRD WTO, TRIPS, TRIMS, Dispute settlement in WTO regime, WTO and its impact on Indian Economy.

15 Hours

Module 5: Economic Reforms

Economic Reforms – Need for Economic Reforms – Main features of reforms – structural changes –privatization, globalization and liberalization

10 Hours

References:

1. Gupta. K.R (2009), International Economics Vol 1&2, Atlantic Publisher, New Delhi
2. Rajkumar (2008), International Economics, Excel Books Publisher, New Delhi
3. Francies Cherunilam (2010),International Economics, Tata Mcgraw Hill Publisher, New Delhi
4. Desai, S S M & Nirmala Bhaleerao (2008), International Economics, Himalaya Publisher, Mumbai
5. Malhotra. V.K (2012), International Economics, Anmol Publisher, New Delhi,
6. Mithani. D. M (2005),The Essence of International Economics, Himalaya Publisher, Mumbai
7. Mithani. D. M (2010), International Economics, Himalaya Publisher, Mumbai
8. Bhatia. H. L (2009),International Economics, Vikas Publication pvt.Ltd, New Delhi
9. Peter H Lindert (2004), International Economics, Richard D Im in Publisher, Delhi
10. Dr. Shymasundar (2011), International Economics, Basava Prakashan, Shimoga
11. ಎಚ್‌ಆರ್‌ಸಿ (2015), ಅಂತರರಾಷ್ಟ್ರೀಯ ಅರ್ಥಶಾಸ್ತ್ರ, ಸಪ್ತ ಬುಕ್ ಪೌಸ, ಬೆಂಗಳೂರು
12. ಎಚ್‌ಆರ್‌ಸಿ (2015),ಅಂತರರಾಷ್ಟ್ರೀಯ ಮತ್ತು ಸಾರ್ವಜನಿಕ ಅರ್ಥಶಾಸ್ತ್ರ, ಸಪ್ತ ಬುಕ್ ಪೌಸ, ಬೆಂಗಳೂರು
13. ಕೃಷ್ಣಯ್ಯಗೌಡ, ಹೆಚ್ ಆರ್ (2014), ಅಂತರರಾಷ್ಟ್ರೀಯ ಅರ್ಥಶಾಸ್ತ್ರ, ವಿದ್ಯಾನಿಧಿ ಪ್ರಕಾಶನ, ಗದಗ
14. ವೀರಯ್ಯ ಕೆ ಎಮ್ (2001),ಅಂತರರಾಷ್ಟ್ರೀಯ ಅರ್ಥಶಾಸ್ತ್ರ, ಅಕ್ಷತ ಪ್ರಕಾಶನ, ಮೈಸೂರು
15. ಡಾ. ಶ್ಯಾಮಸುಂದರ (2011),ಅಂತರರಾಷ್ಟ್ರೀಯ ಅರ್ಥಶಾಸ್ತ್ರ, ಬಸವಾ ಪ್ರಕಾಶನ, ಶಿವಮೊಗ್ಗ

III B.A - V SEMESTER

SAE-251 RURAL DEVELOPMENT AND CO-OPERATION- PAPER-VI
(OPTIONAL PAPER)

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Objective:

The main objective of this paper is to introduce the student to basic understanding of the concept, importance and rural development and co-operative movement in India.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module-1 Rural Development

Introduction, Nature and Scope of Rural Development, Objectives and Importance, Characteristics of Rural Economy, Rural Development Administration and Suggestions; Rural Agriculture in Rural Development, Gender Bias in Rural Development.

10 Hours

Module-2 Agrarian Reforms in Rural Development

Introduction, Agricultural Reforms (Institutional and Technological reforms), Agricultural Research Extension Services; Rural Housing; Rural Health; Rural Income- Causes for Low of Rural Income, Rural Indebtedness, Remedial Measures; Income Difference between Rural and Urban Sector; Vision of 12th Plan, Information Dissemination. - Tribal in India; Development and Problems, and Development Programmes.

15 Hours

Module - 3 Approaches to Rural Development

Gandhian-Approach; Sectoral Approach; Cluster Approach; Service Area Approach; Participatory Approach; Dr.APJ Abdul Kalam's Approach (PURA Model).

10 Hours

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Module - 4 Rural Industrialisation and Infrastructure in India

Introduction, Rural and Cottage Industries; Importance, Problems of Rural Industries, Programmes for Development of Rural Industries, Meaning, Types, Importance, Rural Transport, Importance and problems, Communication, Introduction, Important types of Rural Communication System and Importance; Rural Electrification, Different Schemes, Rural Water Supply, Rural Sanitation; Biogas Programme, Advantages; Social Forestry, Objectives and Scope; Protection of Rural Resources; Community Participation; Rural Banking.

15 Hours

PART-II: CO-OPERATION

Unit-I: Co-operative Credit Movement in India

Credit; Agricultural and Non-agricultural, Agricultural Marketing and processing, Milk Producers, Consumers Co-operatives, problems, Factors necessary for better consumers' cooperative movement. Cooperative marketing, objectives, advantages, progress, Industrial cooperatives, objectives, types, importance, types of rural industrial cooperatives, Weavers' cooperatives societies, oil crushing cooperatives, Handicrafts cooperatives societies, Leather cooperatives, Palm-gut-cooperative societies, other industrial cooperative societies, problems, housing cooperatives, importance and problems.

20 Hours

Unit-II: Structure of Co-operative Credit

Primary credit societies, district co-operative banks, state co-operative banks, national co-operative bank, urban co-operative banks, Regulation by RBI, International co-operative Alliance.

10 Hours

References:

1. Ajit Singh, (2007), Rural Development and Banking in India, Theory and Practice, Deep and Deep Publications, New Delhi
2. Dwivedi, R.C., Hundred years of Cooperative Movement in India, Centre for Promoting Cooperatives.
3. G.R. Madan (2007), Co-Operative Movement in India, Mittal Publications
4. Jain, P.K. (1988), Industrial Finance Corporation of India: A study in Financial Management, Anmol Publications, New Delhi
5. Sahkar Darshan ; Himatlal Mulani

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B.A - V SEMESTER

KARNATAKA ECONOMY- PAPER-VI
(OPTIONAL PAPER)

SAE-261

Objectives:

1. To enable a student to have an overview of the working of the Karnataka economy.
2. To enable a student to understand the changes in the Karnataka economy
3. To enable a student to understand the leading issues in the Karnataka economic development.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module 1:- Karnataka Economy an overview:-

Geographical feature: - features of Karnataka Economy growth of PCI, HDI, PQLI,
Demographic profile of Karnataka: trend in population growth-growth rate: density-Age-sex and size composition -Recent population policy - Rural Urban migration.

15 Hours

Module 2:- Poverty and unemployment in Karnataka:-

Poverty rural and urban poverty-causes- incidence-un-employment: Types, causes, employment generation & poverty alleviation programs- Self-employment programs-wage Employment programs-Habitat development program initiated by Government of Karnataka-regional imbalances in Karnataka: causes and effects. Dr.M. Nanjundappa committee report- women empowerment NGO's-self-help group.

15 Hours

Module 3: Agriculture Development in Karnataka:-

Trends in agricultural production- Land reforms in Karnataka - Features and causes-low agricultural productivity -dry land forming, water shed development in Karnataka. Agriculture finance: institutional and Non-Institutional sources. Irrigation - Interstate water dispute sources- interstate water disputes land Reforms-Agricultural marketing problems-Agriculture prices: price policy-PDS.

15 Hours

Module 4: Industry & Tertiary Sector:-

Recent industrial policy of Government of Karnataka-small & medium scale industries- Importance, growth and problems-Industrial finance-Transport and communication: Growth and development of road and railways-Information Technology-Karnataka's Recent Trade policy.

15 Hours

Module-5: Karnataka State Financial Management:-

Sources of Revenue-Tax and Non-Tax VAT, GST -Public borrowing-Karnataka tax system- problems- Growth of public expenditure-Karnataka Budget-karnataka state finance commission- debt management in Karnataka-E- Governance in Karnataka.

15 Hours

Reference Books:-

1. Prasanna. T & Rajanna. K .A (2012),Karnataka Economy, College Book House, Bangalore
2. Govt., of India (2010),Karnataka development Report, Govt, of India
3. ಎಜ್ಜಾರ್ಕೆ (2012), ಕರ್ನಾಟಕ ಅರ್ಥಿಕತೆ, ಸಪ್ತ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು
4. ಕೃಷ್ಣಯ್ಯನಿಡ, ಪಿಚ್ ಆರ್ (2014),ಕರ್ನಾಟಕ ಅರ್ಥಿಕತೆ, ಸ್ವಂದನ ಪ್ರಕಾಶನ, ಬೆಂಗಳೂರು

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III. B.A., - ^{IV} SEMESTER

271
SAE-11

TOURISM ECONOMICS- PAPER-VI
(OPTIONAL PAPER)

Objective:

The main objective of this paper is to make students understand and introduce them to basic understanding of the concept, and importance of tourism economics.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module -1: Introduction to Tourism Economics:

Definition - meaning- nature and scope of tourism-Fundamental concepts: Tourist, travelers, visitor, transit visitor and excursionist - Leisure, recreation and tourism and their Interrelationship-Tourism Development and National economy: contribution to GDP-importance of tourism industry in India and Karnataka-Historical dimensions of tourism: Early travels-emergence of modern tourism-factors influencing growth and development of international and national tourism-Impact of industrialization and technological advancement on tourism industry.

15 Hours

Module -2: Demand and Supply aspects of Tourism

Nature -trends in tourism demand- Factor influencing tourism demand- Tourism supply: Market Structure and Tourism supply- Supply trends in tourism-Economic impacts of Tourism: Income and Employment-Balance of payments -Foreign exchange, Socio-cultural impacts of tourism-cultural exchange among nations and international understandings-Impacts of tourism on ecology and environment.

20 Hours

Module -3: Infrastructure and Forms of Tourist transportation

Tourism Infrastructure: Types, Forms and Significance - Accommodation: Forms and types - Tourist transportation: Air- Surface- Rail and Water-Karnataka Tourism: Growth and Development of Tourism in Karnataka-Contribution of tourism to state GDP-Role of KSTDC and private agencies.

15 Hours

22

Module-4: Tourism Marketing

Core concepts in Marketing: products market-tourism forecasting-Product life cycle: New product development-customer satisfaction and related strategies-marketing agencies-hotel-resort-home stay-travel agencies and other tourism related services- challenges and strategies.

15 Hours

Module-5: Tourism Policy and Planning

Role government-public and private sectors-role of international multinationals-state and local tourism organizations-tourism policy 1982 and 2002-investment opportunities and government policy (hotel and tourism industry) -sources of funding.

15 Hours

Reference Books

1. Vanhove, N. The Economics of Tourism Destinations, Oxford: Elsevier Butter worth
2. Kotler, Philip : Marketing Management & Hospitality and Tourism Marketing
3. Sinha, P.C : Tourism marketing
4. Vearne, Hospitality marketing
5. Kotler, Philip and Armstrong Philip: Principle of Marketing,
6. Crough, Marketing Research for Managers.

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21

III B.A. - VI SEMESTER
HUMAN RESOURCE MANAGEMENT- PAPER VIII
(Compulsory Paper)

Objectives:

1. To enable a student to have an overview of the changing scenario in human resource management
2. To enable a student to understand the basics of management
3. To build the knowledge of the conceptual and theoretical importance of the concept.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module- 1 Human Resource Management:

Meaning, Definition, Nature, Scope, significance and Objective. Evolution & development Of HRM; Role, Duties and Responsibilities of Human Resource Manager
Human Resource Management and Total Quality Management. 15 Hours

Module- 2 Human Resource planning:

Human Resource Planning - Meaning Importance and Need for Resource Planning; Benefits and Limitations of Human Resource Planning; steps In Process Of Human Resource Planning 15 Hours

Module - 3 Job Analysis and Design

Job analysis- concept, objectives, significance, process of job analysis; techniques of job design and methods of job design. 15 Hours

Module- 4 Recruitment and Selection

Recruitment- meaning- need-, recruitment techniques, Sources-internal and external sources, process of Recruitment, recruitment policy, selection, steps in Selection process - test interviews, types, group Discussion, placement and induction- Training - need, importance, objectives, types and Methods of training, benefits of training, identification Training need. Designing training programmes, Executive development.

20 Hours

Module - 5 Performance Appraisal

Meaning of performance appraisal, objectives of Performance appraisal, methods- traditional and performance, merits and pit falls of Performance evaluation, Sigma.

15 Hours

References:

1. Basava. K. D(2010),Human Resource Management, Vidyavahini Prakashan, Hubli
2. Baligar. G.B(2009),Human Resource Management, Ashok Prakashan
3. Subba Rao, P(2009),Essentials of Human Resource Management and Industrial Relations, Himalaya Publisher, Mumbai
4. Gupta. Shashi .K & Joshi. Rosy, Human Resource Management, Kalyani Publication, Ludhiana
5. Ramachandra. K & Shivarudrappa. D(2005),Human Resource Management, Himalaya Publisher, Mumbai
6. Khanka. S. S (2012),Human Resource Management text & cases, S Chand Publisher, New Delhi
7. Gupta. C B(2002),Human Resource Management , S Chand Publisher , New Delhi
8. Appannaiah.H .R & Reddy. P. N (2009),Human Resource Management, Hima Publisher, Mumbai
9. ಬಸವಾ.ಕೆ. ಡಿ(2010),ಮಾನವ ಸಂಪನ್ಮೂಲ ನಿರ್ವಹಣೆ, ವಿದ್ಯಾವಾಹಿನಿ ಪ್ರಕಾಶನ, ಹುಬ್ಬಳ್ಳಿ
10. ಬಸವಾ.ಕೆ.ಡಿ (2010), ಮಾನವ ಸಂಪನ್ಮೂಲ ಅಭಿವೃದ್ಧಿ, ವಿದ್ಯಾವಾಹಿನಿ ಪ್ರಕಾಶನ, ಹುಬ್ಬಳ್ಳಿ
11. ಬಳಗಾರ್. ಈ.ಬಿ (2009), ಮಾನವ ಸಂಪನ್ಮೂಲ ನಿರ್ವಹಣೆ, ಅಶೋಕ ಪ್ರಕಾಶನ

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Indian Economic Environment- paper VIII
(Optional Paper)

Objectives:

The main objective of this paper is to introduce the student to understanding of the Economic sphere of Indian Economic Environment, planning polices and Budgeting aspects of the Govt. of India.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module - 1: Structure of Indian Economy

Is India a developing economy? – Features of Indian economy- Growth and trends in national income – Regional inequalities - Causes - remedies. Meaning of Poverty, poverty line- extent- causes- poverty alleviation programmes.

15 Hours

Module - 2: Demographic Profile

Understands the population growth- density, age, sex, size, composition, population policy of 2000- changes in occupation structure- Unemployment- extent- measure- rural urban migration.

15 Hours

Module -3: Agriculture in India

Understands in agricultural production- causes for low production and productivity- Organic farming food security and self sufficiency – New agricultural Strategy – National Agricultural Policy 2000- Agricultural finance - Institutional and non institutional- Agricultural marketing problems 2000- Irrigation defects- Water conservation- Rain water harvesting- Water shed Development.

20 Hours

Module- 4: Indian Industry

Importance Industries - Industrial Policy since 1991 - Problems of public sector enterprise, - Iron, sugar and cotton industries - Role and problem of small scale industry- Disinvestment policy Issues- Education-, Tourism - The role of IT Industry in Indian economy.

15 Hours

Module- 5: Planning Budget and Taxation

Concept of planning- policy commission and national development council of India- decentralized planning -latest five year plans (NITI Aayog) - meaning and types of budget - revenue, expenditure and capital budget - deficit budget -tax reforms in India- GST.

15 Hours

References:

1. Gaurav Datt & Ashwani Mahajan (2012), Indian Economy, New Age International Publisher, New Delhi
2. Datta & Sundaram (2012), Indian Economy, S Chand Publisher, New Delhi
3. Puri. V. K & Misra.S.K (2012), Indian Economy, Himalaya Publisher, Mumbai
4. Ramesh Singh (2009), Indian Economy for Civil Service Examination, Tata McGraw Hill Publisher, New Delhi
5. Agrawal. A. N (2010), Indian Economy Problems of Development & Planning, New Age International Publisher, New Delhi
6. Deepashree (2011), Indian Economy Performance and Policies, Ane Books Pvt, Ltd, New Delhi
7. Basava.K.D (2010), Indian Economy, Vidyavahini Publisher, Hubli
8. Sankaran. S (2007), Indian Economy, Margham Publication Publisher, Chennai
9. ಎಚ್.ಎಸ್.ಎಸ್. (2014), ಭಾರತದ ಆರ್ಥಿಕತೆ, ಸೆಕ್ಸ್ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು
10. ಕೃಷ್ಣಯ್ಯನೊಡ ಹೆಚ್ ಆರ್ (2014), ಭಾರತದ ಆರ್ಥಿಕತೆ, ಸ್ಪಂದನ ಪ್ರಕಾಶನ, ಬೆಂಗಳೂರು
11. ಬಸವಾ. ಕೆ.ಡಿ(2010), ಭಾರತದ ಆರ್ಥಿಕಾಭಿವೃದ್ಧಿ ಅರ್ಥಶಾಸ್ತ್ರ, ವಿಧ್ಯಾವಾಹಿನಿ ಪ್ರಕಾಶನ, ಹುಬ್ಬಳ್ಳಿ

PUBLIC ECONOMICS- PAPER VIII
(Optional Paper)

Objectives:

1. To enable a student to have an overview of the working of the public economics.
2. To enable a student to understand the changing trends in the public finance.
3. To enable student to understand the role of government under liberalized environment.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module – 1 Principles of Public Economics

Meaning-nature - scope-importance--failures of market economy- externalities- public goods vs private goods-merit goods V/s non-merit goods-Role of government in a mixed economy and in the changing economic environment-principle of maximum social advantage.

15 Hours

Module – 2 Public Revenue

Sources of public revenue (Centre, State & Local), Taxation and non taxation, direct and indirect taxes: - Merits and demerits- Cannons of taxation - incidence of taxation - taxable capacity - optimal taxation Laffer curve) recent tax reforms (VAT & GST - Kelker Committee recommendation)

20 hours

Module – 3 Public Expenditure

Meaning-Classification of public expenditure plan and non-plan development-development and non-development-Wagner law, Role and effects of public expenditure in economic development-causes for increasing public expenditure in recent years in India-recent reforms to control public expenditure.

15 Hours

Module - 4 Public Debts

Meaning - need for public debt-sources of public borrowing-classification of public debt-effects of growth of public debt-causes for growth of public debt-debt burden and future generation - methods of redemption of debt-debt controversy,

20 Hours

Module-5 Budget and Public Policy

Budget- meaning-kinds- classification of budget- zero based budgeting- the concept of fiscal deficit- deficit financing- Fiscal policy in India. Present central and state budget

10 Hours

Reference:

1. Anderson John E: Public Finance: Principles and Policy, Houghton Mifflin Company, Boston.
2. Bagchi. A : Reading in Public Finance, Cambridge University Press, new Delhi
3. Hugh Dalton: Principles of Public Finance, Allied Publishers Pvt. Ltd.
4. Lekhi .R.K. Public Finance, Kalyani Publishers, New Delhi
5. Om Prakash: Public Economics: Theory a Practice, Vishal Publishing Co, Ludhiana
6. Hinderick, John and Myles Gareth: Intermediate Public Economics, PHI, New Delhi

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III B.A. - VI Semester

SAF-261

RESEARCH METHODOLOGY- PAPER VIII
(Optional Paper)

Objectives:

1. To enable student to have an idea about research.
2. To enable student to understand the importance of social research.
3. To enable student to understand the basic methods of conducting social research.

Note: The award of Internal Assessment (IA) is based on the performance of one internal test and skill development activity (weightage: 50% + 50%)

Module-1 Introduction to Research

Meaning, Definitions, Objectives. Scientific methods – Induction and deduction – Research and theory –Conceptual or theoretical model – Social Science Research – Meaning Objective limitations- Types of research.

15 Hours

Module -2 Review of Literature:

Need for Reviewing Literature – What to Review and for what purpose – Literature Search Procedure – Source of Literature – Planning the Review Work – Note –taking. .

15 Hours

Module -3 Planning of Research

The Planning Process – Selection of a problem for Research – Formulation of the Selected Problem – Hypotheses –Concepts – Measurement – Research Design or Plan.

15 Hours

Module-4 Sampling

Introduction – Sampling Techniques or Methods – Sample Design and choice of sampling Techniques – Sample Size – Sampling and Non- Sampling Errors.

20 hours

Module-5 Methods of Collection of Data

Meaning and importance of Data – Sources of Data – Use of Secondary Data – Methods of Collecting Primary Data : General – Observation – Experimentation – Simulation- Interviewing – Panel Method – Mail Survey – Projective Techniques – Sociometry – Content Analysis.

15 Hours

Reference

1. Dr. O.R. Krishnaswami (1996) Methodology of Research in Social Sciences, Himalaya Publishing House
2. C.R. Kothari (2004) Research Methodology, Methods and Techniques (Second revised Edition), New age international Publishers
3. Kothari. C. R (2011), Research Methodology, New Age International Publisher, New Delhi
4. Ram Ahuja (2003), Research Methods, Rawat Publication, Jaipur & New Delhi
5. Khan. J. A (2009), Research Methodology, APH Publications, New Delhi
6. ಅಶೋಕ, ಜಿ ಎಸ್ (2011), ಸಂಶೋಧನ ವಿಧಾನ, ಮಿಂಚು ಸವನಿಕ ಪ್ರಕಾಶನ, ದಾವಣಗೆರೆ.



KUVEMPU UNIVERSITY

DEPARTMENT OF SOCIOLOGY

**REVISED SYLLABUS FOR THE BACHELOR OF ARTS
UNDER GRADUATE**

**WITH EFFECT FROM THE ACADEMIC YEAR 2018-19
ONWARDS**

KUVEMPU UNIVESITY

UG SOCIOLOGY SYLLABUS

Semester	Title of the Papers	Teaching Hours
I	Paper I - INTRODUCTION TO SOCIOLOGY	90 (06 hours per week)
II	Paper II - STUDY OF INDIAN SOCIETY	90 (06 hours per week)
III	Paper III - RURAL SOCIOLOGY	90 (06 hours per week)
IV	Paper IV - RESEARCH METHODOLOGY	90 (06 hours per week)
V	Paper V - FOUNDATIONS OF SOCIOLOGICAL THOUGHT (Compulsory Paper)	80 (05 hours per week)
	Paper VI - POPULATION STUDIES (Optional Paper)	80 (05 hours per week)
	Paper VI - MEDICAL SOCIOLOGY (Optional Paper)	80 (05 hours per week)
VI	Paper VII - URBAN SOCIOLOGY (Compulsory Paper)	80 (05 hours per week)
	Paper VIII - CURRENT SOCIAL PROBLEMS OF INDIA (Optional Paper)	80 (05 hours per week)
	Paper VIII - INDUSTRIAL SOCIOLOGY (Optional Paper)	80 (05 hours per week)

MODEL QUESTION PAPER PATTERN FOR B.A. SOCIOLOGY

- Maximum Marks:80 per Subject
- Examination Duration: 03 Hours
- Each Question paper is divided into three Sections. Viz A, B and C.

SECTION- A

- Short answer Questions
- Answer any four out of Six – $04 \times 05 = 20$ Marks

SECTION –B

- Medium answer Questions
- Answer any three out of five- $03 \times 10 = 30$ Marks

SECTION – C

- Long answer Questions
- Answer any two out of three- $02 \times 15 = 30$ Marks

Note: The award of Internal Assessment (IA) is based on the performance in one internal test and one skill development activity related to prescribe syllabus. (Weightage: 10 Marks for One Internal Test + 10 Marks for One Skill Development Activity = 20 Marks)

I Year BA Semester-I

Paper-I: INTRODUCTION TO SOCIOLOGY

Unit-I: Introduction

The Meaning and Definition of Sociology. Nature, Scope and importance.
Development of Sociology in India.

Unit-II: Basic Sociological Concepts

Meaning, Definition and Characteristics of (A) Community (B) Institution
(C) Social Structure (D) Role and Status.

Unit- III: Heredity and Environment

A) Heredity- Meaning, Mechanism and the Role of Genes.
B) Environment- Meaning, Types and Influence of Environment on Personality

Unit-IV: Socialization and Culture

A) Socialization- Meaning and Definition, Agencies of Socialization - Family, Education Peer Group, Mass Media. Importance of Socialization. Theory of Looking glass self.
B) Culture- Meaning and Definition. Characteristics and Recent Trends.

Unit-V: Social Control:

Meaning, Definition and Importance of Social Control.
Types – Formal (law and education), Informal (folkways and mores)

Unit-VI: Social Change:

Meaning, Definition and Characteristics. Factors of Social Change-Physical, Biological, Cultural and Technological.

Reference Books

1. Gisbert - Fundamentals of sociology. Ed. 3rd, Pub. Orient Black Swan Publication 1973
2. Harry M Johnson- Sociology – A Systematic Introduction. First published in 1998.
Routledge is an imprint of Taylor & Francis, an informa company.
3. Jayaram, N- Introduction to sociology, Rawat Publications, 2015
4. Kingslay Devis - Human society. 4th edition pub. Macmillan Company, 1952
5. Shankar Rao, C.N - Sociology. Edition Reprint, S. Chand Limited, 1990

I Year BA SEMESTER-II
PAPER-II: STUDY OF INDIAN SOCIETY

Unit- 1 Indian culture

Characteristics - Spiritual basis, Universal Outlook, Spirit of Inquiry, Unity in Diversity, Integral Approach, Harmony with Nature, Tolerance, Respect of Women hood.

Unit-II: Caste System:

Meaning, Definition, Positive and Negative aspects of Caste System. Caste and politics.

Unit-III: Hindu Marriage and Family:

- a) Objectives of Hindu Marriage, Recent trends and legislation (Hindu Marriage Act, Special Marriage Act and Dowry prohibition Act)
- b) Family: i) Joint family- Meaning, Definition, Merits and Demerits.
ii) Nuclear Family- Meaning, Definition and Functions.

Unit-IV: Status of Indian Women

- a) Status of Hindu Women through the Ages
- b) Status of Christian Women
- c) Status of Muslim Women

Unit V: Social Stratification

Meaning, Definition and Characteristics

Unit-VI: Backward Class and Minority

- a) Tribal of India- Meaning, Definition and Problems of Tribals.
- b) Schedule Caste- Meaning, Problems of SCs. Protection of Civil Rights Act.
- c) Backward Class Movement with special reference to Karnataka
- d) Religious Minorities- Problems of Muslims and Christians.

Reference Books

- 1) Ghurye, G.S - Caste and race in India. Pub. Popular Prakashana Bombay.
- 2) Kapadia KM - Marriage and Family in India, Ed.3, Oxford University Press, 1972
- 3) Prabhu, P.H - Hindu Social Organization. (I.S.I. Publications, New Delhi: Sterling Publishers (P) Ltd., 1972),
- 4) Ram Ahuja - Indian Social System. Ed. Reprint, Rawat Publ., 2006
- 5) Ramachandra Rao S. K- Social Institutions among the Hindus. Wesley Press, Mysore, the printers of this book- Bangalore
- 6) Srinivas, M.N. - Caste in Modern India and other Essays. Media Promoters & Publishers, 1989

II Year BA SEMESTER –III
PAPER – III: RURAL SOCIOLOGY

Unit – I: Introduction

Meaning, Definitions, Scope and Importance of Rural Sociology. Historical Development of Rural Sociology with special reference to India. Characteristics of Rural Community. Villages in India: Types, Changes in Rural Society.

Unit-II: Rural Problems:

Problems and Remedies of (1) Agriculture (2) Cottage Industries (3) Child and Women Labour (4) Health and sanitation (5) Farmer's Suicide.

Unit III: Globalization and Rural Change

Meaning, Definition, Characteristics and Impacts of Globalization on Rural Change.

Unit –IV: Rural Political Structure

Panchayat Raj -Objectives, Structure and Functions with special reference to Karnataka. Role of Women in Panchayat, Crisis in Rural Politics.

Unit-V: Rural Development

(1) Role of NGO's in Rural Development (2) Self Help Groups
(3) SEZ (Special Economic Zone):- Positive and Negative Aspects (4) Rural Leadership

Reference Books

- 1) Boden, Powell - The Indian Village Community, the University of California, Longmans, Green, and Company, 1896
- 2) Desai, A. R. - Rural Sociology in India , Pub. Popular Prakashan
- 3) Chidambaram Introduction to Rural Sociology –, John Wiley & Sons Canada, Limited, 1977
- 4) Dube, S.C. - Indian Villages, First published in 1998. Rutledge is an imprint of Taylor & Francis, an informa company.
- 4) Gurumurthy , U - Panchayath Raj and the Weaker Sections, New Delhi, Ashish Publishing House, 1987, xiii, 211 p.
- 5) Jain, S. C., Community Development and Panchayati Raj in India, Allied Publishers, Bombay, 1967. Jayaswal, K. P., Hindu Polity, The Bangalore Printing and Publishing Company, Bangalore, 1967.
- 6) Madan, G.R. - The Indian Rural Problems, Allied Publishers
- 7) Nanavathi, M.B and Anjaria, J. J - The Indian Raral Problems, Pub. (the Indian Journal of Statistics), Calcutta, Vol. 7, Part 3, 1946.

II Year BA SEMESTER – IV

PAPER –IV: RESEARCH METHODOLOGY

Unit –I: Social Research

Meaning, Definitions, Types and Qualities of Social Researcher. Research Design (Meaning and Uses). Stages of Social research. Uses and Limitations of Social Research.

Unit-II: Social Survey

Meaning, Definitions, Types, Advantages and Limitations.

Unit – III: Sampling

Meaning, Definitions, Types, Advantages and Limitations.

Unit-IV: Observation

Meaning, Definitions, Types, Advantages and Limitations.

Unit - V: Questionnaire

Meaning, Definitions, Types. Schedule- Meaning and Characteristics. Construction of Mailed Questionnaire, Uses and Limitations.

Unit – VI: Interview

Meaning, Definitions, Types, Advantages and Limitations.

Unit-VII: Report Writing

Interpretation of Data- Classifications, Editing, Coding and Tabulation.
Report Writing- Meaning, Contents of Report.

Reference Books

- 1) Ahuja, Ram - Research Methods, Reprint, Rawat Publications, 2001
- 2) Goode and Hatt - Methods in Social Research, Surjeet Publication, 2006
- 3) Gopal, M.H - Introduction to Research Procedure in Social Science, Asia Publishing House, 1964
- 4) Clause Adolf Moser - Survey Methods in Investigation, Ed. 2, reprint, Pub. Gower, 1979
Cornell, University 12 Jan 2009
- 5) Raj, Hans - Theory and Practice in Social Research, Pub. Surjeet Publications, 1979
- 6) Sharma, BAV., Prasad ,Ravindra., Sathyanarayana, P - Research Methods in Social Science (New Delhi : Sterling, 1985),
- 7) Wilkinson and Bandarkar - Methodology and Techniques of Social Research. Ed.9
Himalaya Publishing House, 1999
- 8) Young, P.V- Scientific Methods in Social Survey and Research, Editor Herbert Blumer,
Literary Licensing, LLC, 2012

III Year BA SEMESTER -V

PAPER-V: FOUNDATIONS OF SOCIOLOGICAL THOUGHT (Compulsory Paper)

Unit –I: Development of Sociological Thought

Meaning, Definition and Importance. Stages of Social thought.

Unit – II: Auguste Comte: Brief Life History and his contributions - (a) Law of Three Stages

(b) Hierarchy of Sciences (c) Religion of Humanity.

Unit-III: Herbert Spencer: Brief Life History and his contributions - (a) The law of Evolution

(b) The organic Analogy.

Unit-IV: Emile Durkheim: Brief Life History and his contributions:- (a) Division of Labor
(b) Typology of Suicide.

Unit –V: Max Weber: Brief Life History and his contributions - (a) Bureaucracy
(b) Social Action.

Unit – VI: Karl Marx: Brief Life History and his contributions - Class Struggle.

Unit-VII: Indian Sociologist

- a) A.R. Desai – Brief Life history and his contributions on Rural Society
- b) M.N. Srinivas- Brief Life history and his contributions on - (a) Social Mobility
(b) Dominant Caste.
- c) Iravati Karve – Brief Life history and her contributions on Kinship Organization in India.

Reference Books

- 1) Raymond Aron - Main Currents in Sociological Thought. Transaction Publishers, 1998
- 2) Emory Stephen Bogardus - The Development of Social Thought, Longmans, Green, 1947
- 3) Chambliss, Rollin - Social Thought, Pub.Fb&c Limited, 30-Sep-2016
- 4) Collin. R and Makowsky M.-The Discovery of Society, Pub. McGraw-Hill, 2010
- 5) Lewis A Coser- Masters of Sociological Thought: Ideas in Historical and Social Context, Pub, Waveland Press, 2003
- 6) Nishet R - The Sociological Tradition. Ed.Reprint, revised, Pub Transaction Publishers, 1993

III Year BA SEMESTER – V

PAPER –VI: POPULATION STUDIES (Optional Paper)

Unit –I: Meaning and Definitions of Population Studies:

Development of Population Studies in general. Development of Population Studies in India and Importance of its Study.

Unit-II: Source of Population:

- 1) Census: Meaning and Importance of Census, Procedure and Problems of Census Taking.
- 2) Civil Registration System: Meaning and Importance.

Unit –III: Population Theories:

- a) Malthusian theory of Population with critical evaluation.
- b) Optimum population theory with critical evaluation.
- c) Demographic transition theory with critical evaluation.

Unit-IV: Compositional Characteristics of Population:

Age and Sex -Meaning and Importance. Dependency Ratio, Population Pyramid, Ageing of Population.

Unit-V: Demographic Process:

Fertility- Birth Process. Influencing Factors:- Socio- Cultural and Physiological Factors.

Mortality – Meaning and causes of Mortality.

Infant and Maternal Mortality - Meaning and Causes.

Migration – Meaning, Types, and Determinants of Migration.

Unit –VI: Population in India:

- a) Causes and Effects of Over Population.
- b) Family Planning: Meaning, Objectives, Methods, Success and Failure.
- c) Population Education: Objectives and Importance.
- d) Family Welfare Program: Meaning and Objectives.

Reference Books

1. Agarwal, S.N. - Some Problems of India's Population, Publisher Vora, 1966, the University of Michigan.
2. Bhende , Asha and Kanitkar, Tara - Principles of Population Studies, Himalaya Publishing House, 1994
3. Cox, Peter R. Demography. Cambridge University Press, 1955. Pp. 11–67. Eldridge,
4. Andrew G. Onokerhoraye- Population Studies, A.G. Onokerhoraye, 1985, Indiana University.
5. Kuppu Swamy : Population and Society in India, Popular Prakashan Private Ltd., 1975,
6. Thomson and Lewis - Population Problems,5th edition, Publisher, McGraw-Hill, 1970

III Year BA SEMESTER – V

PAPER –VI: MEDICAL SOCIOLOGY (Optional Paper)

Unit I: Medical Sociology

- a. Health: Goals and Definitions
- b. Related Terms/; Sociology of Health and Sociology of Disease
- c. Difference between Sociology of Medicine and Sociology in Medicine

Unit II: Constructing Illness

- a. Definitions of Illness, Sick and Disease
- b. Sick Role- Role of Nurses and other Paramedics
- c. Stigma of Mental Illness and HIV Positive

Unit III: Socio-Cultural Determinants of Health

Family, Gender, Housing, Sanitation, Environment, Nutrition and Cultural Practices.

Unit IV: Healthcare and Systems

- a. Hospital as a Social Institution
- b. Role of Pharmaceutical Industry and Advertisements
- c. Introduction of Healthcare Systems- Folk Medicine/ Ethnomedicine, Ayurveda, Unani, Siddha, Yoga, Homeopathy and Allopathy

Unit V: Healthcare Delivery in India

- a. Health Policies, Mental Health Policies
- b. Overview of Health Programmes related to Women, Children and the Disabled

Reference Books

1. Albert, Gary L. and R. Fitzpatrick (1994). Quality of Life In Healthcare: Advances in Medical Sociology, Mumbai: Jai Press.
2. Annandale Allen (2001). The Sociology of Health and Medicine- A Critical Introduction, Cambridge: Polity Press.
3. Bloom, Samuel W. (1963). The Doctor and His Patient, New York: Free Press.
4. Chloe Bird, Peter Conrad and Alan Fremont eds. (2000). Handbook of Medical Sociology, New York: Prentice Hall.
5. Cocker ham, William C. (1997). Medical Sociology, New Jersey, Prentice Hall.
6. Coe, Rodney M, (1970). Sociology of Medicine, New York: McGraw Hill.
7. Conrad, Peter ed. (2005). Sociology of Health and Illness: Critical perspectives, New York: Worth Publishing.
8. Dutta, P.R. (1955). Rural Health and Medical Care in India, Amble: Army Education Press.
9. Schwartz, Howard (1994). Dominant Issues in Medical Sociology, New York: McGraw Hill.
10. Venkataratnam, R (1979). Medical Sociology in an Indian Setting, Madras:

III Year BA SEMESTER – VI

PAPER-VII: URBAN SOCIOLOGY (Compulsory Paper)

Unit-I: Urban Sociology and Urban Community

- a) Urban Sociology – Introduction, Definition, Scope and Importance.
- b) Urban Community-Characteristics, Distinction between Rural-Urban Communities.

Unit-II: Urbanism and Urbanization

- a) Urbanism-Meaning and Definition.
- b) Urbanization-Meaning and Definition. Factors responsible for Urbanization.
Urbanization in India. Theories of Urbanization- (i) Concentric zone circle theory
(ii) Sector theory.

Unit-III: Industrialization and Work

- a) Industrialization-Meaning, Industrialization and Social Change, Effects of Industrialization
- b) Work- Social Importance of work

Unit-IV: Urban Problems

Causes, Effects and Remedies of:

- a) Housing Problem
- b) Slum Problem
- c) Problems of Sex Workers (Prostitution)
- d) Drug Addiction

Unit-V: Urban Planning and Development

- a) Urban Planning-Meaning, Objectives, Problems of Urban Planning in India.
- b) Urban Development – Meaning, Objectives and Agencies of Urban Development.

Reference Books

1. Ahuja, Ram- Social problem in India Rawat Publications; 3rd Revised & Updated edition (2014)
2. Slums and urbanization. /Edited by A. R. Desai and S. Devadas Pillai. Bombay : Popular Prakashan, [1970]
3. Burgess Ernest - Urban Sociology ,University of Chicago Press; Abridged edition (June 1, 1967)
4. Madan, G.R - Indian Social Problems (Vol-1): Social Disorganization and Reconstruction Volume 1 of Seventh edition, Allied Publishers, 1966
5. Rao, M. S. A. - Urban Sociology in India. Orient Longman, 1992

III Year BA SEMESTER – VI

PAPER-VIII: CURRENT SOCIAL PROBLEMS OF INDIA (Optional Paper)

Unit- I: Structural Problem

- a) Casteism: Meaning, Definitions, Causes, Effects and Remedies.
- b) Communalism: Meaning Definitions, Causes, Effects and Remedies (Social and legal).

Unit-II: Familial problems

- a) Problems of Aged: Meaning, Definitions, Causes, Effects and Remedies.
- b) Gender Discrimination: Meaning, Definitions, Causes, Effects and Remedies.
- c) Domestic problems:
 - 1. Dowry- Act of 1961 and 1986.
 - 2. Divorce – Meaning and Definition. Divorcee as Social Evil. Causes and Remedies

Unit-III: Developmental problems

- (a) Regional Disparities: Meaning, Definitions, Causes, Effects, Remedies and Legislations (Article – 371(J)).
- (b) Globalization: Meaning, Definitions, Causes and Effects-positive and Negative Impacts.

Unit-IV: Organizational problems:

- a) Terrorism: Meaning, Definitions, Causes, Effects Remedies and Legislations.
- b) Corruption: Meaning, Definitions, Causes, Effects and Remedies. The role of Lokayukta and CBI.
- c) Youth Unrest: Meaning, Definition, Causes, Effects and Remedies.
- d) Juvenile Delinquency: Meaning, Definition, Types, Causes, Effects and Remedies (Social and Legal).

Reference Books

1. Ahuja, Ram- Social problem in India Rawat Publications; 3rd Revised & Updated edition (2014)
2. ATTAR, A D: Juvenile delinquency: A comparative study. (Popular Prakashan, Bombay, 1964)
3. Gerald Berreman. "Social Inequality: A Cross-Cultural Analysis" in Social Inequality: Comparative and Developmental Approaches, pp. 3–40. Ed. New York: Academic Press.
4. Ghurye, G.S Social Tensions in India. Bombay: Popular Prakashan, 1968. xi + 552 pp., index. Rs. 72 (cloth).

III Year BA SEMESTER – VI

PAPER-VIII: INDUSTRIAL SOCIOLOGY (Optional Paper)

Unit I: Industrial Sociology

- a. Nature and Scope of Industrial Sociology
- b. Definition- Industry- Sociological Approach
- c. Rise and Development of Industry
- d. Rise of Industrial Sociology

Unit II: Dimensions of Work

- a. The Concept of Work- Work as a Universal Activity
- b. Monotony-Fatigue-Alienation-Gender-Unpaid Work and Forced Labour

Unit III: Forms of Industrial Culture and Organization

Industrialism, Post-Industrial Society, Information Society

Unit IV: Problems in Industry

Industrial Sickness- Industrial Disputes- Absenteeism- Management and Labour Relationship.

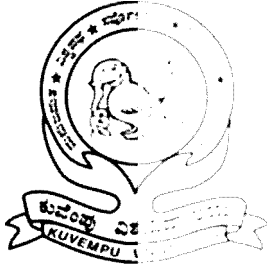
Labour Organization: Nature and Functions, Collective Bargaining and its Features, Risk- Hazards and Disaster

Unit V: Labour Legislation

- a. Post 1990's Labour Laws in India
- b. Labour Welfare: Changing Policy Orientations (Pre 1990's and Post 1990 decades)
- c. International Labour Organization

Reference Books

1. Agarwal, R.D. (1974) Dynamics of Labour Relations in India. New Delhi, Tata McGraw Hill Publishing Company.
2. Baldev Sharma, R (1974) The Indian Industrial Worker. Bombay, Vikas Publishing House.
3. Giri, V.V. (1972) Labour Problems in Indian Industry. Bombay, India Asia Publishing House.
4. Gisbert Pascal (1972) Fundamental of Industrial Sociology. Bombay, Tata McGraw Hill.
5. Jain, S.C. (1971) The India Manager, Somalia Publication.
6. Miller, D.C. and Form, W.H. (1964) Industrial Sociology. New York, Harper and Row.
7. Parker, S.R. (et.el.) (1990) The Sociology of Industry. London, Allen and Unwind.
9. Schneider, E.V. (1960) Industrial Sociology (Ed). New York, McGraw Hill.
10. Sing, V.B. (1963) Industrial Labour in India. Bombay, Asia Publishing House.
11. Spaulding, Charles B. (1970) An Introduction to Industrial Sociology. Bombay, D.B.Taraporevala Sons and Co. Pvt Ltd.
12. Warner and Low (1947) the Social System of the Modern Factory, Yale University Press.



KUVEMPU UNIVERSITY

**Jnana Sahyadri - Shankara Ghatta
Shimoga**



Under Graduate Syllabus

KUVEMPU UNIVERSITY

B.A.: Political Science Semester Course

I - Semester

Paper – I: **Basic Concepts in Political Science**

- ❖ **Title of the course: Basic Concepts in Political Science**
- ❖ **Number of teaching hours per week : 6 Hours**
- ❖ **Total marks: 80**

Course Rationale:

- To acquaint the students with the basic concepts and issues of political inquiry.

Chapter 1: Political Science

- ☞ Meaning, Nature, Scope and importance of Political Science
- ☞ Methodology of Political Science –
 - a. Philosophical Method b. Historical Method
 - c. Comparative Method d. Experimental Method
 - e. Behaviorism and Post Behaviorism

Chapter 2: State

- ☞ Meaning, Definition and Elements of State
- ☞ Origin of the State – Historical or Evolutionary theory
 - Social contract theories (with special reference to Hobbes, Locke and Rousseau)
- ☞ State and Globalization
 - a. Meaning of Globalization b. Impact of Globalization
- ☞ Welfare State-Meaning and Functions

Chapter 3: Sovereignty

- ☞ Meaning and definition of Sovereignty
- ☞ Features of Sovereignty
- ☞ Types of Sovereignty
- ☞ Theories of Sovereignty a. Monistic Theory b. Pluralistic Theory

Chapter 4: Law and Justice

- ☞ Law - Meaning and Importance.
- ☞ Sources of Law
- ☞ Kinds of Law
- ☞ Justice
 - a. Meaning, Importance and kinds of Justice.
 - b. Theories of Justice : Philosophical Theory and Legal Theory

Chapter 5: Rights and Duties**Rights**

- ☞ Meaning, Nature and Importance of Rights
- ☞ Kinds of Rights
- ☞ Safeguards of Rights

Duties

- ☞ Meaning and Importance of duties
- ☞ Kinds of duties

REFERENCE BOOKS

- | | |
|---------------------|---|
| ➤ A.C. KAPUR | - Principles of Political Theory |
| ➤ APPADORAI | - Substance of Politics 1986 |
| ➤ ASIRVATHAM E. | - Political Theory 1990. |
| ➤ ROBERT DAHL | - Modern Political Analysis 1990 |
| ➤ EBENSTEIN | - Modern Political Thought |
| ➤ EBENSTEIN | - Today's Isms |
| ➤ ADI H. DOCTOR | - Issues in Political Theory |
| ➤ S. F. VERMA | - Modern Political Theory |
| ➤ AC.KOHARI | - Contemporary Political Theory |
| ➤ K. CHANDRA SHEKAR | - Harold J. Laski: State and Ideologies |
| ➤ ಎಎಸ್. ಕೃಷ್ಣರಾವ್ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ |
| ➤ ಎಂ.ಅಮುದ್ದಿನ್ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ ಮತ್ತು ಸಿದ್ಧಾಂತಗಳು |
| ➤ ಎನ್. ಹಾಲಪ್ಪ | - (NET, K.A.S., I.A.S) ರಾಜ್ಯಶಾಸ್ತ್ರ |
| ➤ ಕೆ. ಜಿ. ಸುರೇಶ್ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ ಮತ್ತು ಚಿಂತಕರು |
| ➤ ಹೆಚ್.ಉ. ರಾಮಕೃಷ್ಣ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ |
| ➤ ಉ. ಮಲ್ಲಪ್ಪ | - ಆಧುನಿಕ ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ ಮತ್ತು ದಾಖಲೆಗಳು |

KUVEMPU UNIVERSITY**B.A.: Political Science
Semester Course****II - Semester****Paper – II: Political Theory and Thinkers**

- ❖ **Title of the course: Political Theory and Thinkers**
- ❖ **Number of teaching hours per week : 6 Hours**
- ❖ **Total marks: 80**

Course Rationale:

- To introduce the student to the Autonomous field of inquiry of politics.
- To introduce the student to the major ideologies that map and regulate the political universe.

Chapter 1: Political Theory

- ☞ Meaning and importance of political theory.

Chapter 2: Major Political Ideology**a. Liberalism: Meaning and Principles of liberalism****b. Democracy:**

- ☞ Meaning and importance of Democracy.
- ☞ Kinds of Democracy.
- ☞ Essentials of Democracy
- ☞ Merits, Demerits and Challenges of Democracy.

C. Socialism: Meaning, Principles, Merits and Demerits of Socialism.**Chapter 3: Ancient Indian Political Thinkers**

- ☞ **Kautilya:** Saptanga Theory and Mandala Theory of Kautilya
- ☞ **Basavanna**

Chapter 4: Contemporary Indian Political Thinkers

- ☞ **Mahatma Gandhi**
- ☞ **Ambedkar**
- ☞ **Jayaprakash Narayan**
- ☞ **Ram Manohar Lohia**

Chapter 5: Western Political Thinkers

☞ Plato.

☞ Aristotle

BOOKS FOR REFERENCE

- | | |
|--------------------------|---|
| ➤ A.C. KAPUR | - Principles of Political Theory |
| ➤ APPADORAI | - Substance of Politics 1986 |
| ➤ ASIRVATHAM E. | - Political Theory 1990. |
| ➤ ROBERT DAHL | - Modern Political Analysis 1990 |
| ➤ EBENSTEIN | - Modern Political Thought |
| ➤ EBENSTEIN | - Today's Isms |
| ➤ ADI DOCTOR | - Issues in Political Theory |
| ➤ S. F. VERMA | - Modern Political Theory |
| ➤ A.C.KOHARI | - Contemporary Political Theory |
| ➤ ಎನ್. ವಿಘ್ನೇಶ್ ಎನ್. ಭಟ್ | - ಬಸವತತ್ವ: ಸಾಮಾಜಿಕ ಆಯಾಮಗಳು |
| ➤ ಎಮ್. ಕೃಷ್ಣರಾವ್ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ |
| ➤ ಮಾಲಮುದ್ದಣ್ಣ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ ಮತ್ತು ಸಿದ್ಧಾಂತಗಳು |
| ➤ ಎನ್. ಹಾಲಪ್ಪ | - (NET, K.A.S., I.A.S) ರಾಜ್ಯಶಾಸ್ತ್ರ |
| ➤ ಕೆ.ಜಿ. ಸುರೇಶ್ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ ಮತ್ತು ಚಿಂತಕರು |
| ➤ ಹೆಚ್.ಐ. ರಾಮಕೃಷ್ಣ | - ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ |
| ➤ ಐ. ಮಲ್ಲಪ್ಪ | - ಆಧುನಿಕ ರಾಜಕೀಯ ಸಿದ್ಧಾಂತ ಮತ್ತು ದಾಖಲೆಗಳು |
| ➤ ಜೆ. ಎಸ್. ಸದಾನಂದ | - ಕೌಟಿಲ್ಯ |
| ➤ ಲಕ್ಷ್ಮಣಗೌಡ | - ದಲಿತ ಸುಯೋಗ |
| ➤ ಚನ್ನ ಬೀರಪ್ಪ | - ಧರ್ಮ ಭಂಡಾರಿ ಬಸವಣ್ಣ |
| ➤ ಕೆ. ಚಂದ್ರಶೇಖರ್ | - ಆಧುನಿಕ ಭಾರತದ ರಾಜಕೀಯ ಚಿಂತಕರು |

KUVEMPU  UNIVERSITY**B.A.: Political Science
Semester Course****III - Semester****Paper – III: Modern Government**

- ❖ **Title of the course: Constitutions and Government**
- ❖ **Number of teaching hours per week : 6 Hours**
- ❖ **Total marks: 80**

Course Rationale:

- To acquaint the students with to major constitutions of the world.

Chapter 1: Constitution

- ☞ **Meaning and importance of the study of Constitution**
- ☞ **Constitutionalism**
- ☞ **Types or kinds of constitution.**

Chapter 2: Constitution of U.K.

- ☞ **Salient Features**
- ☞ **Conventions**
- ☞ **Executive:** Crown, Prime Minister and Cabinet.
- ☞ **Legislature:** The Parliament
 - ❖ **House of Commons:** Composition Powers and functions.
 - ❖ **House of Lords:** Composition, Powers and functions.
 - ❖ **Supremacy of the parliament.**
- ☞ **Rule of Law**

Chapter 3: Constitution of U.S.A.

- ☞ **Salient Features:**
- ☞ **The Executive:**
 - ❖ **President-** election, Powers, Functions & Position of the President.
 - ❖ **The Vice-president**
- ☞ **The Legislature - The Congress:**
 - ❖ **The Senate.** Composition. Powers and Functions.
 - ❖ **House of Representatives-** Compositions. Powers and Functions.
- ☞ **The Judiciary- The Supreme Court-** Composition. Powers and Functions of the Supreme Court.
- ☞ **Judicial Review.**

Chapter 4: Constitution of Switzerland

- ☞ **Salient features of the Swiss Constitution**
- ☞ **The Executive - Federal Council:** Unique Features of federal council, Organization, Powers & Functions of Federal council.
- ☞ **The Legislature- Federal Assembly:**
 - National Council: Composition
 - Council of States: Composition.
 - Powers and Functions of Federal Assembly.
- ☞ **The Judiciary - Federal Tribunal:** composition, Powers and Functions.
- ☞ **Direct Democratic Devices in Switzerland:** Referendum, Initiative and Recall – Merits and Demerits of DDD.

Chapter 5: Constitution of Srilanka

- ☞ **Salient Features of the Srilankan Constitution**
- ☞ **The Executive**
- ☞ **The Legislature**

BOOKS FOR REFERENCE

- | | | |
|-----------------------------------|---|---------------------------|
| ➤ Herman Finer | - | Govt. of European Powers |
| ➤ D. D. Basu | - | Comparative Federalism |
| ➤ A. C. Kapoor | - | Select Constitutions |
| ➤ F. Ogg and H. Zink | - | Modern Political System |
| ➤ Vishnu Bhavan and Vidya Bhushan | - | Select Modern Governments |
| ➤ ಹೆಚ್. ಆರ್. ದಾಸೇಗೌಡ | - | ಸಂವಿಧಾನ ಮತ್ತು ಸರ್ಕಾರ |
| ➤ ಎಂ.ನಂಜುಂಡ ಸ್ವಾಮಿ | - | ಆಧುನಿಕ ಸರ್ಕಾರಗಳು |
| ➤ ಯು.ಗುರುಮೂರ್ತಿ | - | ಆಧುನಿಕ ಸರ್ಕಾರಗಳು |
| ➤ ಹೆಚ್. ಟಿ.ರಾ.ಮಧುಸೂದನ | - | ಆಧುನಿಕ ಸರ್ಕಾರಗಳು |
| ➤ ಟಿ. ಮಲ್ಲಪ್ಪ | - | ಆಧುನಿಕ ಸರ್ಕಾರಗಳು |
| ➤ ಡಿ. ಜಿ. ಸುರೇಶ್ | - | ಆಧುನಿಕ ಸರ್ಕಾರಗಳು |
| ➤ ಎಂ. ಎಸ್. ಪಾಟೀಲ | - | ಆಧುನಿಕ ಸರ್ಕಾರಗಳು |

KUVEMPUR UNIVERSITY



B.A.: Political Science Semester Course

IV - Semester

Paper – IV: Indian Government and Politics

Title of the course: Indian Government and Politics

❖ **Number of teaching hours per week :** 6 Hours

❖ **Total marks:** 80

Course Rationale:

- To acquaint the students with the knowledge of Indian Political system.

Chapter 1: Basic Aspects of Indian Political System

- ☞ Preamble
- ☞ Salient Features
- ☞ Fundamental Rights and Duties
- ☞ Directive Principles of State Policy

Chapter 2: Union Government

- ☞ **The Executive:**
 - ❖ **The President:** Election, Power and Functions.
 - ❖ **The Vice-President:** Election, Power and Functions.
 - ❖ **The Prime-Minister and council of Ministers:** Powers and Functions
- ☞ **The Legislature - The Parliament**
 - ❖ **Lok Sabha:** Composition, Powers and functions.
 - ❖ **Speaker:** Election. Powers and functions.
 - ❖ **Rajya Sabha:** Composition, Powers and functions.
- ☞ **The Judiciary**
 - ☞ **Supreme Court:** Composition, Powers and Functions.
 - ☞ Judicial Activism
 - ☞ Public Interest Litigation.

Chapter 3: State Government

A. The Executive:

- ☞ **The Governor:** Appointment, Powers and Functions,
- ☞ **Chief-Minister and Council of Minister:** Powers and Functions

B. The State Legislature. :

- ☞ **Legislative Assembly:** Composition, Powers and Functions

C. The Judiciary

- ☞ **High Court:** Composition, Powers and Functions.

Chapter 4: Local Self Governments

- ☞ Grama Panchayat , Taluk Panchayat , Zilla Panchayat – Organization, Powers and Functions

Chapter 5: Elections.

- ☞ Election commission of India. Composition, Powers and Functions
- ☞ Political Parties and Pressure Groups.

BOOKS FOR REFERENCE

- | | | |
|---------------------------|---|--|
| ➤ V.D. Mahajan | - | Indian Constitution |
| ➤ D.D.Basu | - | Introduction to the constitution of India |
| ➤ Gopal N.K Choudhary | - | Indian Constitution |
| ➤ B.L.Fadia | - | Indian Government and politics |
| ➤ B.L.Fadia | - | The constitution of India |
| ➤ M.V.Pylee | - | An introduction to the constitution of India |
| ➤ H M Rajashekar | - | Indian Government and politics |
| ➤ M S Patil | - | Indian Constitution |
| ➤ ಚಿಕ್ಕೋಡಿ ಸಿ.ಎಂ | - | ಭಾರತದ ಸಂವಿಧಾನ |
| ➤ ಭುವನೇಶ್ವರ ಪ್ರಸಾದ್ ಎಂ.ಪಿ | - | ಭಾರತದ ಸಂವಿಧಾನ |
| ➤ ವಿ. ಜಿ. ಸಾಅಮರ | - | ಭಾರತದ ಸಂವಿಧಾನ ಮತ್ತು ಸರ್ಕಾರ |
| ➤ ಕೆ. ಜಿ. ಸುರೇಶ | - | ಭಾರತ ಸರ್ಕಾರ ಮತ್ತು ರಾಜಕೀಯ |
| ➤ ಹೆಚ್. ಎಂ. ರಾಜಶೇಖರ್ | - | ಭಾರತ ಸರ್ಕಾರ ಮತ್ತು ರಾಜಕೀಯ |
| ➤ ಎಮ್. ಎಸ್. ಪಾಟಿಲ್ | - | ಭಾರತ ಸಂವಿಧಾನ |
| ➤ ಹೆಚ್. ಟಿ. ರಾಮಕೃಷ್ಣ | - | ಭಾರತ ಸಂವಿಧಾನ |
-

KUVEMPU UNIVERSITY**B.A.: Political Science****Semester Course****V - Semester****Paper – V: Principles of Public Administration.**

- ❖ **Title of the course:** Principles of Public Administration
- ❖ **Number of teaching hours per week :** 6 Hours
- ❖ **Total marks:** 80

Course Rationale

- To introduce the basics of public administration to the student.
- To make the students to realize the significance of structure, organizational aspects.
- To make them to understand and motivate about personnel administration and civil service system in India.

Chapter 1: Public Administration: The Framework

- ☞ Meaning, Nature/Scope and Importance of Public Administration.
- ☞ New Public Administration and Development Administration.
- ☞ Delegated Legislation - Need, merits and demerits, safeguards.
- ☞ Administrative Tribunals – Meaning , Features, Merits, Demerits and Safeguards

Chapter 2: Organization

- ☞ **Meaning of Organization**
- ☞ **Principles of Organization**
 - a. Hierarchy
 - b. Unity of command
 - c. Span of Control
 - d. Centralization and Decentralization
 - e. Co-Ordination
- ☞ **Theories of Organization**
 - a. Scientific Management, b. Human Relations

Chapter 3: Personnel Administration

- ☞ **Civil Service:** Meaning, Features and Functions.
- ☞ **Recruitment:** Qualifications and Methods.
- ☞ **Training:** Objectives and Types.
- ☞ **Morale:** Motivating factors.
- ☞ **Conduct and Discipline.**

Chapter 4: Civil Service in India

- ☞ All India Services, Central Services and State Services.
- ☞ Union Public Service commission – Organization and Functions.
- ☞ State Public Service Commission – Organization and Functions. .
- ☞ Political Neutrality and Commitment.

Chapter 5: Public Relations:

- ☞ Corruption in Civil Service. Meaning , Definitions and Causes
- ☞ Lokpal and Lokayukta
- ☞ Redressal of Public Grievances.
- ☞ ARC Recommendations.

BOOKS FOR REFERENCE

- A Avasthi and S.R. Mahesvari - Public Administration
- Mohit Biiattacharya - Public Administration
- A. R. Tyagi - Public Administration
- C.P.Bhambri - Public Administration
- Dr. Rumki Basu - Public Administration
- Hans Roi - Public Administration
- Vishnu Bhagvan and Vidya Bushan - Public Administration
- S.P.Verma and S.N. Swaroop - Personnel Administration
- R.S. Shiva - Globalization and Indian Liberalization
- Dubahashi - Public Administration.
- N. Hallappa - NET, KAS, IAS
- ಹೆಚ್. ಟಿ. ರಾಮಕೃಷ್ಣ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಕೆ. ಜಿ. ಸುರೇಶ್ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಎಂ. ಎಸ್. ಪಾಟೀಲ್ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಮಾ ಅಮುದ್ದಣ್ಣ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಎಂ. ನಂಜುಂಡರಾಜ ಅರಸು - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ

KUVEMPU UNIVERSITY

B.A.: Political Science Semester Course

V - Semester

Paper – VI: Principles of International Relations

- ❖ **Title of the course:** Principles of International Relations
- ❖ **Number of teaching hours per week :** 5 Hours
- ❖ **Total marks:** 80

Course Rationale

- To introduce the students the basic concepts of International Relations.
- To acquaint the students with the major factors that determine the nature of International Relations.

Chapter 1: The Framework of International Relations.

- ☞ Meaning, Nature, Scope and Importance of International Relations.
- ☞ Approaches to the Study of International Relations.
- ☞ **National Power :** Meaning and Elements of National Power
- ☞ **National Interest:** Importance of National interest.

Chapter 2: Principles regulating Inter-State Relations.

- ☞ Balance of Power
- ☞ Collective Security
- ☞ Peaceful settlement of international Disputes

Chapter 3: Foreign Policy

- ☞ Meaning, objective and importance of Foreign Policy.
- ☞ Factors influencing on the formulation of Foreign Policy.
- ☞ Relation between Foreign Policy and Domestic Policy.
- ☞ Indian foreign policy- formulation and its features
 - a. India and USA since 2000.
 - b. India and Palestine since 2000.

Chapter 4: Instruments of Foreign Policy

- ☞ **Diplomacy:** Meaning, Nature, Privileges, Immunities, Kinds and Functions.
- ☞ **Propaganda and Subversion :** Meaning, Types, Methods and Role of Propaganda in International Politics
- ☞ **Economic Instruments**
- ☞ **War:** Causes, Effects and Remedies of War

BOOKS FOR REFERENCE

- Hans J. Morgenthau - Politics among Nations 6^m Ed - 1985.
- Palmer and Perkins - International relations.
- Stanley H. Hoffiman - Contemporary Theory in International Relations.
- Quincy Wright - International Politics-A Study of International Relations,
- D.A Boldwin - NIO Realism and Neo Liberalism, New York. Colombia University, Pron 1993.
- M.S. Rajan - Non alignment of the Non-alignment Movement in the Present World order in the Komos (!994)
- Peter calvocorissi - World Politics Since 1945
- V.P.Datt - Indian Foreign Policy Vikos- New Delhi 1999.
- M.S. Rajan - United Nation at Fifty- and Beyon 1996 Ed.
- Prakash Chandra Prem Arora- International Relations (Pub: Book Hie-New Delhi)
- ಹೆಚ್. ಟಿ. ರಾಮಕೃಷ್ಣ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಕೆ. ಜಿ. ಸುರೇಶ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಎನ್. ಹಾಲಪ್ಪ - ರಾಜ್ಯಶಾಸ್ತ್ರ (ಎನ್.ಇ.ಟಿ-ಬಿ.ಎಪ್.ಎಸ್) ಕನ್ನಡ
- ಆರ್. ಜಿ. ಜಂಗಮ್ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಡಿ. ಟಿ. ದೇವೇಗೌಡ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಮಾ ಅಮದ್ದಣ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಎಮ್.ಎಸ್. ಪಾಟೀಲ ಹಾಗೂ ನರಗುಂದ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಬಾಂಧವ್ಯ

KUVEMPU UNIVERSITY**B.A. : Political Science
Semester Course****VI - Semester****Paper – VII: Public Policy and Financial Administration**

- ❖ **Title of the course:** Public Policy and Financial Administration
- ❖ **Number of teaching hours per week :** 5 Hours
- ❖ **Total marks:** 80

Course Rationale

- To introduce the students to the basics of Public Policy.
- To enable them to know about financial administration.
- To understand the accountability of civil service and emerging trends in administration.

Chapter 1: Introduction

- ☞ Meaning – Nature – Scope and Significance of Public Policy.
- ☞ Determinants of Public Policy

Chapter 2: Public Policy Making in India.

- ☞ Major Agencies in Policy Making.
- ☞ Determining Factors of Policy Making.

Chapter 3: Financial Administration.

- ☞ Meaning and importance of Financial Administration.
- ☞ Budget - meaning and essentials for Good Budget
- ☞ **Budgetary process**
 - a. Preparation of budget
 - b. Submission of budget
 - c. Execution of budget
 - d. Control over Budget.

Chapter 4: Control over Public Finance.

- ☞ Legislative control
- ☞ Executive control
- ☞ Judicial control
- ☞ Popular control

Chapter 5: Accounting and Auditing.

- ☞ Comptroller and Auditor General – Composition, Powers and Functions.

BOOKS FOR REFERENCE

- A. Avarthi and S. R. Maheswari - Public Administration
- Mohit Bhattacharya - Public Administration
- A. R. Tyagi - Public Administration
- C. P. Bhambri - Public Administration
- Dr. Rumki Basu - Public Administration
- Hans Roi - Public Administration
- Vishnu Bhagvan and Vidya Bhushan - Public Administration
- S.P.Venna - S.N. Swaroop. - Personnel Administration
- R.S.Shiva - Globalization and Indian Liberalization
- Dubahashi - Public Administration
- MS Patil - Public Administration
- ಹೆಚ್. ಟಿ. ರಾಮಕೃಷ್ಣ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಕೆ. ಜಿ. ಸುರೇಶ್ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಎನ್ ಹಾಲಪ್ಪ - ರಾಜ್ಯಶಾಸ್ತ್ರ (ಎನ್.ಇ.ಐ-ಬಿ.ಎಪ್.ಎಸ್) ಕನ್ನಡ
- ಎಂ. ಎಸ್. ಪಾಟಿಲ್ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಐತಿಹಾಸಿಕ ಅಭಿವೃದ್ಧಿ - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ
- ಎಂ. ನಂಜುಂಡರಾಜ ಅರಸು - ಸಾರ್ವಜನಿಕ ಆಡಳಿತ

KUVEMPUR UNIVERSITY**B.A.: Political Science
Semester Course****VI - Semester****Paper – VIII: Major Issues in International Relations**

- ❖ **Title of the course:** Major Issues in International Relations
- ❖ **Number of teaching hours per week :** 5 Hours
- ❖ **Total marks:** 80

Course Rationale

- To introduce the students the basic concepts and issues of International Relations,
- To acquaint the students with the major factors-that determine the nature of International Relations.

Chapter 1: Arms Control and Disarmament

- ☞ Meaning and Importance
- ☞ Nuclear arms Control Measures
- ☞ Disarmament and its Limitations.

Chapter 2: International Law

- ☞ Meaning, Sources, Kinds and Importance
- ☞ Sanctions of International Law
- ☞ Limitations of international Law

Chapter 3: International Organization

- ☞ **UNO:** Origin, Objectives and Principles of International Organizations
- ☞ **UNO:** achievements and Shortcomings – Restructuring of U. N
- ☞ **Specialized Agencies of UNO:** UNESCO, WHO, FAO, ILO
- ☞ **Regional Organizations:** EU and SAARC and BRICS: aims, Objectives and role

Chapter 4: International Economic Relations

- ☞ New International Economic Order
- ☞ Neo-imperialism

Chapter 5: Contemporary Issues

- ☞ Human Rights
- ☞ Global warming and environment.
- ☞ Terrorism: Causes of terrorism, Types of terrorism.

BOOKS FOR REFERENCE

- Hans J. Morgenthau - Politics among Nations 6th Ed - 1985.
- Palmer and Perkins - International relations.
- Stanley H Hoffman - Contemporary Theory in International Relations,
- Quincy Wright - International Politics. A Study of international Relations.
- D.A Baldwin - NIO Realism and Neo Liberalism, New York Columbia University. Pron 1993.
- M S. Rajan - Non alignment Movement in the Present World order in the Komos (1994)
- Peter calvocorissi - World Politics Since 1945
- V. P. Datt - Indian Foreign Policy Vikos- New Delhi 1999
- M. S. Rajan - United Nation at Fifty and Beyon 1996 Ed.
- Prem Arora - INR Publications Bookhive, New Delhi
- ಹೆಚ್. ಟಿ. ರಾಮಕೃಷ್ಣ - ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಕೆ. ಜಿ. ಸುರೇಶ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಎನ್. ಹಾಲಪ್ಪ - ರಾಜ್ಯಶಾಸ್ತ್ರ (ಎನ್.ಇ.ಟಿ-ಐ.ಎಪ್.ಎಸ್) ಕನ್ನಡ
- ಆರ್. ಜಿ. ಜಂಗಮ್ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಚಕ್ರವರ್ತಿ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಬಿ. ಡಿ. ಮಹಾಜನ್ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಡಿ. ಟಿ. ದೇವೇಗೌಡ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಮಾಅಮದ್ದಣ್ಣ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಸಂಬಂಧಗಳು
- ಎಮ್.ಎಸ್ ಪಾಟೀಲ ಹಾಗೂ ನರಗುಂದ - ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಬಾಂದವ್ಯ



Kuvempu University

Department of Post-Graduate Studies and Research in Commerce

Jnana Sahyadri, Shankaraghatta 577 451 (Shivamogga District, Karnataka)

e-mail: commerce@kuvempu.ac.in

Minutes of the Meeting of Board of Studies in Commerce (UG) held on Friday, 29 December 2017 at 11 am in the DoS in Commerce, Kuvempu University, Jnana Sahyadri

Members:

- | | |
|-----------------------|----------------------------|
| (1) Sri Umapathi K G | (4) Smt V Shalini |
| (2) Sri Poornesh K | (5) Sri B Malleshi Naik |
| (3) Sri B R Dayananda | (6) J. Madegowda: Chairman |

After the formal welcome by the chairman, the Board took up the subjects listed in the Agenda for discussion and after discussion resolved appropriately as presented below.

(1) Review of Question Papers set for April/November 2017 examinations

The Board reviewed the question papers set for April/November 2017 examinations of B.Com (both regular and distance mode) and found them in order.

(2) Preparation and approval of Panels of Examiners for April/November 2018 examinations of B.Com (both regular and DDE)

The Board prepared and approved the Panels of Examiners for B.Com examinations, 2018 (both regular and distance mode), and authorized the Chairman to send the same to the Registrar (Eval) separately (**Appendix – 1**).

(3) Revision and approval of curricula of B.Com (regular) programme

The Board prepared and approved the thoroughly revised and comprehensive course curricula B.Com programme (Regular). Further, the Board resolved to recommend to the Faculty of Commerce for its consideration and approval (**Appendix – 2**).

(4) Any other subject with the permission of the Chairman: Question Papers

Members of the Board discussed the issue of translating the question papers of quantitative courses from English to Kannada from the points of view of its utility to the students, time and cost factors, and resolved to have the question papers of quantitative courses only in English.

Signature of Members:

- | | |
|----------------------|-------------------------|
| (1) Sri Umapathi K G | (3) Sri B R Dayananda |
| (2) Sri Poornesh K | (4) Sri B Malleshi Naik |

(J. Madegowda)

Chairman

Appendix - 2



Kuvempu University

Department of Post-Graduate Studies and Research in Commerce

Jnana Sahyadri, Shankaraghatta 577 451 (Shivamogga District, Karnataka)

e-mail: commerce@kuvempu.ac.in



B. Com Curricula, 2018-19

[prepared and approved by the Board of Studies in Commerce (UG) in its meeting held on
29 December 2017]



Structure of B.Com Programme

Sl. No.	Academic Programme, Semester and Title of the Course	Weekly Teaching Hours	Examination Duration (hours)	Maximum Marks		
				CAP ¹	SEE ²	Total
B.Com, Semester - I						
101	Language – I, Course - I	4	3	20	80	100
102	Language – II, Course – I	4	3	20	80	100
103	Financial Accounting – I	4	3	20	80	100
104	Business Environment and Government Policy	4	3	20	80	100
105	Principles of Business Management	3	3	20	80	100
106	Market Behaviour and Cost Analysis	4	3	20	80	100
Total, Semester - I				120	480	600
B.Com, Semester - II						
201	Language – I, Course – II	4	3	20	80	100
202	Language – II, Course – II	4	3	20	80	100
203	Financial Accounting – II	5	3	20	80	100
204	Human Resource Management	4	3	20	80	100
205	Mathematics for Business	4	3	20	80	100
206	Indian Financial System	4	3	20	80	100
Total, Semester - II				120	480	600
B.Com, Semester - III						
301	Language – I, Course – III	4	3	20	80	100
302	Language – II, Course – III	4	3	20	80	100
303	Corporate Accounting – I	4	3	20	80	100
304	Marketing Management	4	3	20	80	100
305	Small Business Management	4	3	20	80	100
306	Corporation Administration	4	3	20	80	100
307	Environmental Science	4	3	20	80	100
Total, Semester - III				140	560	700
B.Com, Semester - IV						
401	Language – I, Course – IV	4	3	20	80	100
402	Language – II, Course – IV	4	3	20	80	100
403	Corporate Accounting – II	5	3	20	80	100
404	Management of Banking Operations	4	3	20	80	100
405	Computer Applications in Business	4	3	20	80	100
406	Business Regulations	3	3	20	80	100
407	Indian Constitution	4	3	20	80	100
Total, Semester - IV				140	560	700

¹ Continuous Assessment Programme² Semester-end Examination

B.Com, Semester - V						
501	Financial Management	4	3	20	80	100
502	Income Tax – I	4	3	20	80	100
503	Business Statistics - I	4	3	20	80	100
504	Cost Accounting	4	3	20	80	100
505	Advanced Accounts	4	3	20	80	100
506	Goods and Services Tax	4	3	20	80	100
507	Specialization Stream, Course – I	4	3	20	80	100
508	Logical and Analytical Reasoning	2	1½	10	40	50
Total, Semester - V				150	600	750
B.Com, Semester - VI						
601	International Financial Reporting Standards	4	3	20	80	100
602	Income Tax – II	4	3	20	80	100
603	Business Statistics – II	4	3	20	80	100
604	Cost Accounting – Methods and Techniques	4	3	20	80	100
605	Management Accounting	5	3	20	80	100
606	Principles and Practice of Auditing	3	3	20	80	100
607	Specialization Stream, Course – II	4	3	20	80	100
608	Soft Skills	2	1½	10	40	50
Total, Semester - VI				150	600	750
Grand Total				820	3,280	4,100

Specialization Stream – A: Finance Stream

507A Advanced Financial Management

607A Security Analysis and Portfolio Management

Specialization Stream – B: Marketing Stream

507B Product and Sales Management

607B Retail Management

Specialization Stream – C: Banking and Insurance Stream

507C Advanced Bank Management

607C Life and General Insurance

Specialization Stream – D: E-Commerce Stream

507D E-Commerce – 1

607D E-Commerce – 2

Specialization Stream – E: Quantitative Techniques Stream

507E Quantitative Techniques – 1

607E Quantitative Techniques – 2

B.Com, Semester – I
Course – 103: Financial Accounting – I

Course Objective: To acquaint students with the accounting concepts, conventions, accounting process and preparation of Financial Statements

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit **Course Inputs**

- I. **Introduction to Financial Accounting** (6 hours): Introduction - Meaning and Definition; Objectives of Accounting; Functions of Accounting; Accounting Concepts and Accounting Conventions.
- II. **Final Accounts of Sole Trading Concerns** (12 hours): Financial Statements – Preparation of Manufacturing Accounts; Profit and Loss Account, and Balance Sheet with respect to current market conditions.
- III. **Consignment Accounts** (16 hours): Introduction, Meaning – Consignor, Consignee; Goods Invoiced at Cost Price, Goods Invoiced at Selling Price, Normal Loss, Abnormal Loss, Valuation of Stock, Stock Reserve, Journal Entries, Ledger Accounts in the Books of Consignor and Consignee.
- IV. **Accounting for Joint Ventures** (15 hours): Introduction, Meaning, Objectives, Distinction between Joint Venture and Consignment; Distinction between Joint Venture and Partnership; Maintenance of Accounts – when separate set of Books are maintained, and when separate set of Books are not maintained with Joint Bank Account and Problems.
- V. **Final Accounts of Non-profit Organizations** (15 hours): Meaning of Non-profit Organization, Need for maintaining Accounts, Financial Statements of Non-profit Organizations, Receipts and Payments Account, Income and Expenditure Account, and Balance Sheet. Capital and Revenue Items – Treatment of special Items, Preparation of Income and Expenditure Account, and Balance Sheet from Receipts and Payments Account and Problems.

Skill Development Activities:

- (1) Draft the specimen of various Subsidiary Books
- (2) Collect a Trial Balance from a Sole Trader and prepare Final Accounts
- (3) Prepare Proforma Invoice and Account Sales
- (4) Prepare Joint Venture Account with imaginary figures when joint bank account is maintained
- (5) Collect Receipts and Payment Account of a Non-trading Concern and prepare a note on the contents

Recommended Books for Reference:

- (1) J Madegowda and Dr Giridhar, K V, Financial Accounting (Volume – I), Himalaya Publishing House, Mumbai
- (2) Dr. B. Mariyappa, Anil Kumar – Advanced Financial Accounting, HPH
- (3) Arulanandam & Raman; Advanced Accountancy, HPH
- (4) Dr. Alice Mani: Advanced Financial Accounting, SBH.
- (5) Dr. S.N. Maheswari, Financial Accounting, Vikas Publication
- (6) S P Jain and K. L. Narang, Financial Accounting, Kalyani Publication

B.Com, Semester – I**Course – 104: Business Environment and Government Policy**

Course Objective: To acquaint students with the business environment and government policy

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit**Course Inputs**

- I. **Introduction to Business Environment** (14 hours): Meaning, Objectives of Business, Features of Business, Business Environment, Internal and External Environment - Economic Environment, Social Environment, Cultural Environment, Demographic Environment, Legal Environment, Technological Environment, and Emerging Scenario and Business Policy.
- II. **Business Ethic** (13 hours): Principles of Business Ethics, Unethical Practices and Good Ethics of Business; Social Responsibility of Business, Doctrine of Social Responsibility, Rational of Social Responsibility and Unfair Trade Practices.
- III. **Technology in Business** (12 hours): Introduction, Need and Importance, Technological Factors influencing Business, Benefits and Limitations of Modern Technology to Business.
- IV. **Business and Government** (12 hours): Introduction, Government Intervention and Economic Growth, Regulatory Growth, Promotional Growth, Inter Personal Growth and Planning Growth.
- V. **Business Policy** (13 hours): Importance of Business Policy, Essentials of Business Policy, Classifications of Business Policy, Production Policy, Personal Policy, Financial Policy and Marketing Policy.

Skill Development Activities:

- (1) Draw a Business Tree
- (2) Prepare a Partnership Deed
- (3) Prepare Memorandum and Articles of Association of any company
- (4) Discuss the impact of globalization on Indian Business and Industry
- (5) State the impact of technology on Indian Business

Recommended Books for Reference:

- (1) Dr. Aswathappa Essentials of Business, Himalaya Publishing House
- (2) Francis Cherunilam; Economic Environment Business, Prentice Hall of India
- (3) P. Subba Rao, International Business, HPH
- (4) Amarchand, Business and Government
- (5) Vivek Mittall, Business Environment
- (6) Raj Agarwal, Business Environment

B.Com, Semester – I**Course – 105: Principles of Business Management**

Course Objective: To acquaint students with the principles of managing of business concerns

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit**Course Inputs**

- I. **Nature and Functions of Management** (14 hours): Meaning and Definition, Functions and Scope of Management, Levels of Management, Management vs Administration; Scientific Management, Evolution of Management Thought, Contributions of F W Taylor, Henry Fayol, Elton Mayo, and C.K Prahlad; and

- Management as Science, Art and Profession.
- II. **Planning and Decision Making** (14 hours): Nature and Importance of Planning, Types, Steps involved in Planning, Planning Premises, Planning Process. Decision Making - Meaning, Role, Steps involved in Decision Making Process, Significance of Decision Making, and Guidelines for effective Decision Making.
 - III. **Organizing** (16 hours): Nature, Principles, Types, Structure of Organization, Line and Staff Organization, Formal vs Informal Organization, Delegation of Authority, Principles of Delegation, Barriers to effective Delegation, Guidelines for Making effective Delegation, Span of Control, Authority and Responsibility, Authority vs Power, and Forms of Organization Structure.
 - IV. **Directing, Motivation and Control** (10 hours): Meaning, Nature, Significance and Techniques of Directing: Motivation - Meaning and Importance; Control - Meaning, Steps in Control, Features of effective Control System, Controlling Tools and Techniques, and Essentials of Effective Control.
 - V. **Leadership and Modern Management Techniques** (10 hours): Meaning of Leadership, Leadership Styles and Importance of Leadership: Modern Management Techniques - MBO, MBE, TQM, ISO, Stress Management (only meaning of modern management techniques).

Skill Development Activities:

- (1) Draft an Organization Chart
- (2) Narrate the steps in Selection Process
- (3) List out F W Taylor's Principles of Management
- (4) Narrate the steps in effective Control System
- (5) Mention the features of Modern Management Techniques

Recommended Books for Reference:

- (1) Principles of Management, Koontz and O'Donnell
- (2) Business Management, Gupta C B, Sultan Chand
- (3) Principles and Practice of Management, Prasad L M, Sultan Chand
- (4) Management, Stoner A F and Freeman R.E, Prentice Hall
- (5) Professional Management, Theo Haimann
- (6) Management Concepts and Practice, B P Singh and T N Chhabbra

B.Com, Semester – I

Course – 106: Market Behaviour and Cost Analysis

Course Objective: To acquaint students with the different dimensions of market behaviour and role of cost analysis in decision making

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Firms and Decisions** (14 hours): Firms - Meaning and Goals, Profit Maximization vs Wealth Maximization Dynamics, Decision Making – Features, Process, Strategy, Tactical and Operational Decisions, Game Theory, and Problems.
- II. **Market Forces** (12 hours): Demand - Meaning, Law of Demand, Nature of Elasticity of Demand, Determinants of Elasticity of Demand, Derived Demand Relations. Demand Forecasting - Meaning and Methods (Problems on Trend Projection by Method Least Squares); Supply - Law of Supply, and Determinants of Supply.
- III. **Production and Cost Analysis** (16 hours): Production Function – Concept and Importance, Cost Analysis - Meaning of Short-run and Long-run Costs, Fixed and

Variable Costs, Explicit and Implicit Costs, Opportunity Cost and Incremental Costs (concepts only). Total Cost, Average Cost and Marginal Cost Behavior in Short-run and Long-run (including problems). CVP Analysis – Assumptions, Uses, P/V Ratio, BEP, BE Chart, Margin of Safety and Problems.

- IV. **Pricing Practices and Strategies** (12 hours): Price – Pricing, Pricing Policy, Objectives and Determinants of Pricing Policy, Pricing Methods - Marginal Cost Pricing, Target Rate Pricing, Product Line Pricing, Administered Pricing, Competitive Bidding, Dual Pricing, Transfer Pricing; Price Discrimination - Requirements, Types and Dumping Strategies; Pricing over Product Life Cycle - Skimmed Pricing, Penetration Pricing, Product Line Pricing and Price Leadership; Linear Programming Problems – Problems on Profit Maximization and Cost Minimization using Graphic Method with two Variables.
- V. **Location of a Firm** (10 hours): Locating the Firm, Basic Principles, Selecting an Industrial Location, Primary and Secondary Factors; Sources of Capital, Internal and External Sources; Risk and Uncertainty – Concepts, and Investment Decisions under Uncertainty (Models).

Skill Development Activities:

- (1) A case study on decision making under market uncertainties
- (2) A practical example with graphical presentation of Elasticity of Demand
- (3) Construct a table with imaginary figures showing the relationship of Fixed Cost, Variable Cost, Total Cost, Average Fixed Cost, Average Variable Cost, Average Cost and Marginal Cost.
- (4) Practical analysis of product life cycle of a product
- (5) List out factors to be considered for location of a new firm

Recommended Books for Reference:

- (1) Dr. B. Mariyappa: Market Behaviour and Cost Analysis, Himalaya Publishing House, New Delhi
- (2) P L Mehta: Managerial Economics, Sultan Chand & Sons, New Delhi
- (3) D. M. Mithani: Managerial Economics, Himalaya Publishing House, New Delhi
- (4) R. L Varshney and K.L Maheshwari: Managerial Economics, Sultan Chand & Sons, New Delhi
- (5) H. L Ahuja: Business Economics, S. Chand & Company Ltd., New Delhi
- (6) Reddy and Appananiah: Economics for Business
- (7) K. M. Pandey and others: Economics for Managerial Decisions
- (8) K P M Sundaram: Micro Economics, Sultan Chand & Sons, New Delhi
- (9) M L Jhingan & J K Stephen: Managerial Economics, Vrinda Publishing (P) Ltd, Delhi.
- (10) Manoj Kumar Mishra: Managerial Economics, Voyu Education of India, New Delhi

B.Com, Semester – II

Course – 203: Financial Accounting – II

Course Objective: To acquaint students with the different accounting practices in the company

Pedagogy: combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Hire Purchase System** (16 hours): Meaning of Hire Purchase and Installment Purchase System; Differences between Hire Purchase and Installment Purchase, Important Definitions – Hire Purchase Agreement, Hire Purchase Price, Cash Price,

- Hire Purchase Charges, Net Hire Purchase Price, Net Cash Price; Calculation of Interest, Calculation of Cash Price; and Journal Entries and Ledger Accounts in the books of Hire Purchaser and Hire vendor (Asset Accrual Method only).
- II. **Departmental Accounts** (8 hours): Meaning, Objectives, Basis of Allocation of Expenses, Trading and Profit and Loss Account in Columnar Form and Balance Sheet.
 - III. **Branch Accounts** (14 hours): Introduction, Meaning, Objectives, Types of Branches - Dependent Branches, Features; Supply of Goods at Cost Price and Invoice Price; Branch Account in the books of Head Office, Debtors System only and Problems.
 - IV. **Fire Insurance Claims** (10 hours): Introduction, Need, Steps for ascertaining Fire Insurance Claim, Treatment of Salvage, Average Clause, Treatment of Abnormal Items, Computation of Fire Insurance Claims and Problems on Loss of Stock.
 - V. **Royalty Accounts** (16 hours): Meaning and Definition, Technical Terms – Royalty, Landlord, Tenant, Minimum Rent, Short Workings, Recoupment of Short Working, Recoupment within the life of the Lease, Treatment of Strike and Stoppage of Work, Accounting Treatment in the books of Lessee and Lessor, and Journal Entries and Ledger Accounts including Minimum Rent Account.

Skill Development Activities:

- (1) Collect Hire Purchase Agreement – analyze and prepare a note on the same
- (2) List out the basis of apportionment of common expenses
- (3) Collect transactions relating to any branch and prepare a Branch Account
- (4) Prepare a Claim Statement with imaginary figures to submit to insurance company
- (5) Collect Royalty Agreement with regard to any suitable situation – analyze and prepare a note on the same

Recommended Books for Reference:

- (1) J Madegowda and Dr Giridhar, K V, Advanced Financial Accounting (Volume – II), Himalaya Publishing House, Mumbai
- (2) Dr. B. Mariyappa, Advanced Financial Accounting, HPH
- (3) Arulanandam and Raman, Financial Accounting – I, HPH
- (4) Dr. S. N. Maheswari: Financial Accounting, Vikas Publications
- (5) S P Jain and K. L. Narang, Financial Accounting - I, Kalyani Publishers
- (6) Radhaswamy and R. L. Gupta, Advanced Accounting , Sultan Chand
- (7) Soundarrajan and K. Venkataramana, Financial Accounting, SHBP

B.Com, Semester – II

Course – 204: Human Resource Management

Course Objective: To acquaint students with different dimensions of HRM in the organizations

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Human Resource Management** (12 hours): Meaning and Definition of HRM, Evolution of HRM in India, Scope, Objectives, Concepts, Functions and its Strategic Role, and Recent trends in HRM and HRD.
- II. **Employment and Development** (12 hours): Human Resource Planning, Job Analysis and Job Design, and Recruitment and Selection Process including E–Recruitment and Selection.
- III. **Executive Development** (14 hours): Meaning of Training, Need for Training, Importance, Steps in Training Programme, Methods of Training. Performance

Appraisal – Terminology Used, Evaluation Process, Methods and Problems.

- IV. **Compensation Management** (14 hours): Meaning, Nature and Purpose, Wage Levels and Structures, Wage Determination Process, Theory of Wages, Principles and Factors influencing Wage and Salary Structure and Administration, Rewards and Incentives.
- V. **Human Relations** (12 hours): Meaning, Importance, Objectives, Motivation Theories, Employee Morale, Communication, Leadership, Employee Welfare, Health and Safety, Maintenance of HR Data Base, Challenges and Opportunities in Globalized Era, and Outsourcing of HR Functions.

Skill Development Activities:

- (1) Draft an advertisement for recruitment of candidates for an organization
- (2) Prepare a report for training procedure followed in an organization of your choice
- (3) Draft a format of performance appraisal of an employee
- (4) List out wage and salary structure of any five companies
- (5) Write a model of pay roll accounting of a company of your choice
- (6) List out the measures provided under Labour Act for employee welfare, health and safety

Recommended Books for Reference:

- (1) Dr. K. Ashwathappa, Human Resource Management – HPH
- (2) Dr. Appanaiah, Human Resource Management, HPH
- (3) Rao and T.V. Verma, Human Resource Development
- (4) Jean Marleen, Performance Oriented Human Resource Development
- (5) Lalitha Balakrishna and Others, Human Resource Development

B.Com, Semester – II

Course – 205: Mathematics for Business

Course Objective: To acquaint students with the application of mathematical techniques in modern business

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit **Course Inputs**

- I. **Theory of Indices** (6 hours): Introduction, Meaning of Index, Basic Laws of Indices (statement only), Definition of Zero Index, Fractional Index and Negative Index and Problems on Simplification.
- II. **Progressions** (8 hours): Arithmetic Progression, Finding the n^{th} Term of AP and Sum to n^{th} Term of AP; Insertion of Arithmetic Mean; Geometric Progression – Finding the n^{th} Term of GP and Sum to n^{th} Term GP and Insertion of Geometric Mean.
- III. **Mathematics of Finance, Ratios, Proportions and Variations** (14 hours): Simple Interest, Problems on Simple Interest, Compound Interest, Annuities, Present and Future Value of Annuity, Discounting Bills of Exchange (Present Worth, Future Face Value, Trade Discount and Banker Discount, Bankers Gain and Amount Receivable); Equality of Ratios; Proportions – Fourth Proportional – Third Proportional and Mean Proportional – Continued Proportion, Direct and Inverse Proportions, Problems; Variations - Problems on Speed, Time and Work Completion.
- IV. **Theory of Sets** (10 hours): Meaning, Elements of a Set, Methods of Describing a Set, Types of Sets and Operations, Demargan's Laws Venn Diagram and their Application to Theory of Sets.
- V. **Theory of Equations** (14 hours): Simple Linear Equations, Simultaneous Linear Equation (Elimination, Substitution and Cross Multiplication Methods only),

Quadratic Equation, Pure Quadratic, General Form of Quadratic Equations, Factorization and Sridharacharya's Methods and Problems.

- VI. **Matrices and Determinants** (12 hours): Meaning of Matrix, Types of Matrices, Operations of Addition, Subtraction and Multiplication of Matrices, Problems, Transpose of A Matrix, Determinants of a Square Matrix, Minor of an Element, Co-Factor of an Element, Ad Joint of a Square Matrix, Singular and Non-singular of a Square Matrix, Inverse of a Square Matrix. Solutions of System of Linear Equations in two Variables using Cramer's Rule and Problems.

Skill Development Activities:

- (1) Collect details from your nearest trading concern regarding normal discount and prepare a note on the same
- (2) Collect information from a financial company or firm regarding rate of interest charged on advances and deposits and how the bills are discounted by the business firms and banks - prepare a note on the same
- (3) Develop an amortization table for loan amount – EMI Calculation
- (4) Secondary Overhead Distribution Summary using Simultaneous Equations Method
- (5) Preparation of Bank Statement
- (6) Application of Matrix in business problems

Recommended Books for Reference:

- (1) Dr. Sancheti & Kapoor: Business Mathematics and Statistics, Sultan Chand
- (2) Zamarudeen: Business Mathematics, Vikas
- (3) R.S Bhardwaj :Mathematics for Economics & Business
- (4) Madappa, Mahadi Hassan, M. Iqbal Taiyab, Business Mathematics
- (5) G.R. Veena and Seema, Business Mathematics and Statistics, I. K. Intl Publishers

B.Com, Semester – II

Course – 206: Indian Financial System

Course Objective: To acquaint students with the requisite knowledge about present Indian Financial System

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Financial System** (12 hours): Meaning, Role and Classification of Financial System, Organizational Structure of Indian Financial System, Major Components - Financial Institutions, Intermediaries and Financial Instruments.
- II. **Financial Markets in India** (16 hours): Capital Market, Role and Importance, Development Initiatives and Reforms – Narasimham Committee Reports 1991 and 1998; Primary Market - Meaning, Instruments, Players and Problems; Secondary Market – Meaning, Function; Stock Exchange, Listing of Securities and Benefits, Types of Securities, Types of Dealings. Indian Stock Exchange (BSE, NSE, OTCET) Online Trading, and Demat Accounting.
- III. **Money Market and Regulatory Institutions** (12 hours): Meaning, Features, Organized and Unorganized Money Market Instruments – Treasury Bills, Certificate of Deposits, Commercial Papers, Call Money, Commercial Bills; Emerging Structure of Indian Money Market; Reserve Bank of India (RBI) - Objectives and Functions; Monetary Policy of RBI, SEBI and IRDI – Role and Functions.
- IV. **Co-operative Banking and Non-Banking Financial Institutions** (12 hours): Evaluation of Co-operative as Financial Institutions in India, Structure, Role and

Importance of Co-operative Banks, Agricultural and Non-agricultural Co-operative Banks, NBFIs – Importance, Role and Types of NBFIs In India, IDBI, ICICI, SFCs, SIDCs, LIC And NABARD.

- V. **Financial Services** (12 hours): Meaning, Importance of Financial Services, Insurance, Mutual Funds, Lease Finance, Merchant Banking, Venture Capital Financing, Factorizing, Credit Rating Agencies, Micro Finance and Self Help Groups, Financial Inclusion Programs in India.

Skill Development Activities:

- (1) Draft a chart showing the financial services in the Indian Financial System
- (2) List the instrument traded in the financial markets
- (3) Collect and record the foreign exchange rates of different currencies
- (4) Collect the different schemes of mutual funds offered by various financial institutions
- (5) Make a list of institutions providing housing and vehicle finance in your area

Recommended Books for Reference:

- (1) Principles of Bank Management by Vasantdesai, Himalaya Publishing House
- (2) Indian Financial System by Bharti, Pathak, Pearson Education
- (3) Financial Markets and Services, E. Gordon and K. Natarajan, Himalaya Publishing House
- (4) Indian Financial System, K Gupta, N. Garwal, Kalyani Publications.
- (5) The Indian Financial System – Markets, Institutions, and Services, Pearson, New Delhi
- (6) Financial Institutions and Markets, Growth and Innovation, Bhole L. M: Tata McGraw-Hill, New Delhi

B.Com, Semester – III

Course – 303: Corporate Accounting – I

Course Objective: To acquaint students with the procedure of preparing the accounts of corporate enterprises with the help of principles and regulations

Pedagogy: combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit **Course Inputs**

- I. **Profit Prior To Incorporation** (10 hours): Meaning, Calculation of Time Ratio, Sales Ratio and Weighted Ratio, Treatment of Capital and Revenue Expenditure, and Ascertainment of Pre-incorporation and Post-incorporation Profit by preparing Profit and Loss Account and Balance Sheet.
- II. **Valuation of Shares** (8 hours): Meaning, Need for Valuation of Shares, Factors affecting Valuation of Shares, Methods of Valuation - Intrinsic Value Method, Yield Method & Earning Capacity Method and Calculation of Fair Value of Shares.
- III. **Valuation of Goodwill** (8 hours): Meaning, Circumstances of Valuation of Goodwill, Factors influencing the Value of Goodwill, Methods of Valuation of Goodwill - Average Profit Method, Super Profit Method, Capitalization of Average Profit Method, Capitalization of Super Profit Method, and Annuity Method and Problems.
- IV. **Company Final Accounts** (20 hours): Statutory Provisions regarding preparation of Company Final Accounts, Treatment of Special Items – Tax Deducted at Source, Advance Payment of Tax, Provision for Tax, Depreciation, Interest on Debentures; Dividends – Rules regarding payment of Dividends, Transfer to Reserves; Preparation of Profit and Loss Account, and Balance Sheet in Vertical Form (as per Companies Act, 2013).
- V. **Underwriting of Shares and Debentures** (12 hours): Meaning, Underwriting

Commission; Underwriter – Functions, Advantages of Underwriting, Types of Underwriting – Marked and Unmarked Applications; – Problems on Underwriting including Firm Underwriting.

- VI. **Recent Trends in Company Accounts** (6 hours): Buy Back of Shares, Issue of Bonus Shares and Right Issue and Problems

Skill Development Activities:

- (1) Collect and fill the share application form of a limited company
- (2) Collect Prospectus of a company and identify its salient features, and prepare a note on the same
- (3) Collect annual report of a company and List out its assets and Liabilities
- (4) Collection of latest final accounts of a company and find out the intrinsic value of shares
- (5) Collect the annual reports of company and calculate the value of goodwill under different methods

Recommended Books for Reference:

- (1) J Madegowda, Dr Giridhar, K V, and Inchara P M Gowda, Corporate Accounting (Financial Accounting, Volume – III), Himalaya Publishing House, Mumbai
- (2) Dr. B. Mariyappa, Corporate Accounting, HPH
- (3) Arulanandam & Raman, Corporate Accounting – II
- (4) Dr. S. N. Maheswari, Financial Accounting
- (5) S. P. Jain and K. L. Narang, Corporate Accounting
- (6) S. Bhat- Corporate Accounting
- (7) S P Iyengar, Advanced Accountancy, Sultan Chand
- (8) R L Gupta, Advanced Accountancy
- (9) Shukla and Grewal, Financial Accounting

B.Com, Semester – III

Course – 304: Marketing Management

Course Objective: To acquaint students with different dimensions of present day marketing management

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit **Course Inputs**

- I. **Introduction to Marketing** (10 hours): Meaning and Definition, Goals, Concepts of Marketing, Approaches to Marketing and Functions of Marketing.
- II. **Marketing Environment** (Macro) (10 hours): Meaning, Demographic, Economic, Natural, Technological, Political, Legal, and Socio-Cultural Environment.
- III. **Marketing Mix** (22 hours): Meaning, Elements, Product, Product Mix, Product Line, Product Lifecycle, Product Planning, New Product Development, Failure of new Product; Branding, Packing and Packaging; Pricing – Objectives, Factors influencing Pricing Policy and Methods of Pricing; Physical Distribution – Meaning, Factors affecting Channel Selection, Types of Marketing Channels; Promotion – Meaning and Significance of Promotion, Personal Selling and Advertising.
- IV. **Market Segmentation and Consumer Behavior** (10 hours): Meaning and Definition, Bases of Market Segmentation, Requisites of Sound Market Segmentation; Consumer Behaviour – Factors influencing Consumer Behaviour and Buying Decision Process.
- V. **Customer Relationship Management and Recent Trends in Marketing** (12 hours): Meaning and Definition, Role of CRM, Advantages and Disadvantages, Consumer

Protection Act 1986 and Recent Trends in Marketing; e-Business –Tele-Marketing, M-Business, Green Marketing, Relationship Marketing; Retailing – Concept Marketing and Virtual Marketing.

Skill Development Activities:

- (1) Identify the product of your choice and describe in which stage of the product life cycle it is positioned
- (2) Suggest strategies for development of a product
- (3) Study of consumer behavior for a product of your choice
- (4) Develop an advertisement copy for a product
- (5) Prepare a chart for distribution network for different products

Recommended Books for Reference:

- (1) Philip Kotler, Marketing Management
- (2) Bose Biplab, Marketing Management
- (3) Bholanath Datta, Marketing Management
- (4) J.C. Gandhi, Marketing Management
- (5) Ramesh and Jayanti Prasad: Marketing Management, I.K. International
- (6) Stanton W.J. Michael and Walker, Fundamentals of Management.
- (7) P N Reddy and Appannaiah, Marketing Management
- (8) Sontakki, Marketing Management

B.Com, Semester – III

Course – 305: Small Business Management

Course Objective: To acquaint students with different aspects managing small business units

Pedagogy: combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction** (10 hours): Meaning of Small Business, Small Business Management, Importance, Role, Characteristics and Types of Small Business, Scope and Role of Government in promoting Micro, Small Scale Industries.
- II. **Woman Entrepreneurs** (12 hours): Concept, Types of Woman Entrepreneurs, Suitability of Business, Problems faced by Woman Entrepreneurs in India, Measures taken by the Governments for the development of Woman Entrepreneurs.
- III. **Rural Entrepreneurs** (10 hours): Definitions, Risk faced by Rural Entrepreneurs, Strategies for development of Rural Entrepreneurship, and Scope of Rural Entrepreneurship.
- IV. **Project Identification and Formulation** (12 hours): Meaning of Project, Project Identification and Project Reports, Importance of Project Report, Contents of Project Report, and General Format of Project Report.
- V. **Problems of Small Scale Industries** (12 hours): Types of Problems, Causes and Remedies, Sickness in Small Scale Industries, Symptoms, Reasons for Sickness and Remedial Measures.
- VI. **Institutions engaged in Financing Small Business** (8 hours): SIDBI, ICICI, DICs, IDBI, KSFC, RRBs, NABARD, Commercial Banks and their Functions.

Skill Development Activities:

- (1) Visit five small scale units in your area and collect the details regarding the nature of business, sources of capital, employees and raw materials – prepare a note
- (2) Visit DIC and list out the schemes of Government of Karnataka for rural industries
- (3) Visit the financial institutions in your area and collect the information about the loan

- sanctioned by them
- (4) Collect the details about the institutions engaged in providing training for small entrepreneurs
 - (5) Prepare a simple project report required to start a small unit

Recommended Books for Reference:

- (1) Entrepreneur Development, K Natarajan
- (2) Small Scale Industries and Entrepreneurship, Vasant Desai
- (3) Small Scale Industries and Entrepreneurship, S. V Murthy
- (4) Entrepreneurial Development, Arora

B.Com, Semester – III

Course – 306 Corporate Administration

Course Objective: To familiarize students with the essentials of corporate administration

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Indian Companies Act, 1956** (14 hours): Company –Definition and Characteristics, Kinds of Companies - Private, Public Company, Statutory Company, Foreign Company, Holding Company, Subsidiary Company, and Licensed Companies, Government Company, Foreign Company, Global Company, Listed Company, Body Corporate, Corporate Veil and Lifting of Corporate Veil.
- II. **Formation of a Company**(14 hours) Promoter - Meaning, Functions, Fiduciary Position and Remuneration, Stages Involved in formation (in brief), Basic Documents of a Company - Memorandum Association, Articles of Association, Prospectus, and Statement in Lieu of Prospectus, and Misleading Prospectus and its Consequences.
- III. **Corporate Administration** (8 hours): Company Secretary – Meaning and Definition of Company Secretary, Legal Position, Qualification and Appointment, Duties, Rights and Liabilities of a Company Secretary; Managing Director - Qualification, Powers, Duties and Liabilities.
- IV. **Shares and Membership of a Company Equity** (16 hours): Shares, Kinds of Shares - Equity Shares, (including Sweat Equity Shares) and Preferences Shares Issue and Allotment of Shares, Legal Rules for Allotment of Shares, Essentials of Valid Allotment, Shares Certificate – Physical Form and Electronic Form, Buyback of Shares – Legal Provisions Relating to Buy Back of Shares; Transfer and Transmission of Shares – Distinction, Electronic Transfer, Demat Account, Membership - Member and Share Holder – Distinction, Mode of Acquiring Membership, and Register of Members - Contents And Closer.
- V. **Corporate Meetings** (8 hours): Meetings and Types – Statutory Meeting, Board Meetings, Annual General Meeting, Extra-Ordinary General Meeting – Statutory Requirements of Valid Meeting - Notice of a Meeting, Agenda, Quorum, Proxy, Resolutions–Ordinary and Special Resolutions, and Distinction Between Ordinary and Special Resolutions; and Meaning of Minutes and its Contents.
- VI. **Highlights of Company Act 2013** (4 hours): New Concepts – One-man Company, Women Director, Corporate Social Responsibility and Other Amendments (brief).

Skill Development Activities:

- (1) Drafting of Memorandum of Association
- (2) Drafting of Articles of Association

- (3) Draft the following – Notice of annual general meeting, Extra ordinary general meeting and board meetings
- (4) Drafting resolutions of meetings - Annual general meeting, extra ordinary general meeting
- (5) Collect and fill Demat account opening form

Recommended Books for Reference:

- (1) Company Law and Secretarial Practice – M.C. Kuchal
- (2) Company Law and Secretarial Practice- N. D. Kapoor
- (3) Elements of Corporate Law, S.N Maheshwari
- (4) Corporate administration- K Venkataramana
- (5) The companies Act 2013, Taxman
- (6) Business Law- B.S Raman
- (7) Corporate Administration Dr. B.G Bhaskar, K.R Mahesh Kumar

B.Com, Semester – III

Course – 307: Environment Science

Course Objective: To acquaint students with the ecological structure of environment

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **The Multidisciplinary Nature of Environmental Studies** (2 hours): Meaning, Definition, Scope and Importance, and Need for Public Awareness.
- II. **Natural Resources** (8 hours): Renewable and Non-Renewable Resources; Natural Resources and Associated Problems; Forest Resources - Use and Over-exploitation, Deforestation, Case Studies; Timber Extraction, Mining Dams and their effects on Forests and Tribal People; Water Resources - Use and Over-utilization of Surface and Ground Water, Floods, Drought, Conflicts over Water; Dams - Benefits and Problems; Mineral Resources - Use and Exploitation, Environmental effects of Extraction and using Mineral Resources, Case Studies; Food Resources - World Food Problems, Changes caused by Agriculture and Overgrazing, Effects of Modern Agriculture, Fertilizer-Pesticide Problems, Water Logging, Salinity, Case Studies; Energy Resources - Growing Energy Needs, Renewable and Non-Renewable Energy Sources, Use of Alternate Energy Sources, Case Studies; Land Resources - Land as a Resource, Land Degradation, Man-induced Landslides, Soil Erosion and Desertification, Role of an individual in Conservation of Natural Resources; and Equitable Use of Resources for Sustainable Lifestyles.
- III. **Ecosystems** (6 hours): Concept of an Ecosystem, Structure and Function of an Ecosystem, Producers, Consumers and Decomposers, Energy Flow in the Ecosystem, Ecological Succession, Food Chains, Food Webs and Ecological Pyramids, Introduction, Types, Characteristic Features, Structures and Functions of the Following Ecosystem - Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem, Aquatic Ecosystem (Ponds, Streams, Lakes, Rivers, Oceans, Sanctuaries).
- IV. **Biodiversity and its Conservation** (8 hours): Introduction, Definition, Genetic, Species and Ecosystem Diversity, Biogeographically Classification of India, Value of Biodiversity, Consumptive Use, Productive Use, Social Ethical Aesthetic and Option Values; Biodiversity at Global, National and Local Levels; India as a Mega-Diversity Nation; Hot-Spots of Biodiversity; Threats to Biodiversity; Habitual Loss, Poaching of Wildlife, Man-Wildlife Conflicts, Endangered and Endemic Species of India,

- Conservation of Biodiversity, in-Situ and Ex-Situ Conservation of Biodiversity.
- V. **Environmental Pollution** (8 hours): Meaning, Definition, Causes, Effects and Control Measures of Air Pollution, Water Pollution, Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution, and Nuclear Pollution; Solid Waste Management - Causes, Effects and Control Measures of Urban and Industrial Wastes; Role of an individual in prevention of Pollution, Pollution Case Studies; Disaster Management - Floods, Earthquake, Cyclone and Landslides.
- VI. **Social Issues and the Environment** (12 hours): From Unsustainable to Sustainable Development, Urban Problems related to Energy. Water Conservation, Rain Water Harvesting, Water Shed Management, Resettlement and Rehabilitation of People - Its Problems and Concern, Case Studies; Environmental Ethics - Issues and Possible Solutions, Climate Change, Global Warming, Acid Rain Ozone Layer Depletion, Wasteland Reclamation Consumerism and Waste Products, Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and Control of Pollution) Act, Wild Life Protection Act, Forest Conservation Act, Issues involved in Enforcement of Environmental Legislation, and Public Awareness.
- VII **Human Population and the Environment** (6 hours): Population Growth, Variation among Nations, Population Explosion – Family Welfare Programme, Environment and Human Health, Human Rights, Value Education, HIV/AIDS, Women and Child Welfare, Role of Information Technology in Environment and Human Health, and Case Studies

Skill Development Activities:

- (1) Visit to a local polluted site -urban/rural/industrial/agriculture
- (2) Visit to local area to document environmental assets – rivers/forests/grassland/hill/mountain
- (3) Study of common plants, insects, birds
- (4) Study of simple ecosystems - pond, river, hill, slopes etc (field work equal to 5 lecture hours)
- (5) Each student has to submit a field report on any one of the above topics which forms the basis for evaluation of field work

Recommended Books for Reference:

- (1) Aggarwal K.C, Environmental Biology, Nidhi Publications Ltd, Bikaner
- (2) Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd
- (3) Brunnet R.C, Hazardous Waste incineration, McGraw Hill Inc
- (4) Clark R.S. marine Pollution, Canderson Press, Oxford (TB)
- (5) De A.K. Environmental Chemistry, Wiley Eastern ltd.
- (6) Down to Earth, Centre for Science and Environment
- (7) Gleick H.P, Water in Crisis, Pacific Institute for Studies in Dev. Environment and Security, Stockholm Env. Instt, Oxford Univ. Press
- (8) Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay
- (9) Heywood VII and Watson, R.T. 1995, Global Biodiversity Assessment, Cambridge Univ. Press
- (10) Jadhav II and Bhosale V.M. 1995, Environmental Protection Laws, Himalaya Publishing House, Delhi
- (11) Sharma B.K. 2001, Environmental Chemistry, Goel Pub. House, Meerut
- (12) Trivedi. R.K, Handbook of Environmental Laws Rules, Guidelines, Compliances and Standards Vol I and II Enviro Media

(13) Wagner K.D, Environmental Management, W.B. Saunders Co Philandering, USA

B.Com, Semester – IV

Course – 403: Corporate Accounting – II

Course Objective: To enable the students to understand principles and procedure of preparing accounts of specialized corporate sectors

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 5 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Liquidation of Companies** (8 hours): Meaning, Types of Liquidation, Order of Payment, Calculation of Liquidator's Remuneration, and Preparation of Liquidators Final Statement of Account.
- II. **Banking Company Final Accounts** (16 hours): Business of Banking Companies, Some Important Provisions of Banking Regulation Act of 1949 – Minimum Capital and Reserves, Restriction on Commission, Brokerage, Discounts, Statutory Reserves – Cash Reserves, Books of Accounts, Special features of Bank Accounting, Final Accounts - Balance Sheet and Profit and Loss Account – Interest on Doubtful Debts – Rebate on Bill Discounted, Acceptance, Endorsement and other Obligations and Problems as per New Provisions
- III. **Life Insurance Company Final Accounts** (20 hours): Meaning of Life Insurance, Accounting Concepts relating to Insurance Companies, Preparation of Final Accounts of Life Insurance Companies – Revenue Account and Balance Sheet, and Calculation of Profit by preparing Valuation Balance Sheet.
- IV. **General Insurance Company Final Accounts** (14 hours): Meaning of General Insurance, Differences between Life Insurance and General Insurance – Fire Insurance, Marine Insurance and Accident Insurance; and Preparation of Revenue Account, Profit and Loss Account and Balance Sheet (vertical format).
- V. **Social Responsibility Accounting** (6 hours): Meaning and Definition, Features and Objectives of Social Responsibility Accounting (theory only).

Skill Development Activities:

- (1) Collect and fill the share application form of a limited company
- (2) Collect Prospectus of a company and identify its salient features
- (3) Collect annual report of a company and list out its assets and liabilities
- (4) Collection of latest final accounts of a company and find out the intrinsic value of shares
- (5) Collect the annual reports of a company and calculate the value of goodwill under different methods

Recommended Books for Reference:

- (1) J Madegowda, Dr Giridhar, K V, and Inchara P M Gowda, Advanced Financial Accounting (Volume – IV), Himalaya Publishing House, Mumbai
- (2) Arulanandam and Raman, Corporate Accounting –II
- (3) Anil Kumar, Dr B. Mariyappa, Financial Accounting, HPH
- (4) Dr. S.N. Maheswari, Financial Accounting
- (5) Soundarajan. A and K. Venkataramana, Corporate Accounting, VBH
- (6) S. P. Jain and K. L. Narang, Corporate Accounting
- (7) S. Bhat Corporate Accounting.
- (8) S P Iyengar, Advanced Accountancy, Sultan Chand
- (9) R L Gupta, Advanced Accountancy.

(10) Shukla and Grewal, Financial Accounting

B.Com, Semester – IV

Course – 404: Management of Banking Operations

Course Objective: To acquaint students with the different banking operations

Pedagogy: combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit Course Inputs

- I. **Banker and Customer** (16 hours): Introduction, Meaning and Definition of Banker and Customer, General and Special relationship between Banker and Customer, Special types of Customers – Minor, Joint Account, Partnership, Joint Stock Company, Trustee, Clubs and Associations.
- II. **Types of Accounts and Lending of Fund** (14 hours): Savings Bank Account, Current Account and Fixed Deposit Account – Features, Procedure for opening these Accounts; Lending of Funds – Different types of Loans, Overdrafts, Discounting of Bills, Cash Credit and Principles of Bank Lending.
- III. **Negotiable Instruments** (14 hours): Introduction, Meaning and Definition, Features, Kinds of Negotiable Instruments - Meaning, Definition and Features of Promissory Notes, Bills of Exchange and Cheques; Crossing of Cheques, Types of Crossing, Material Alteration, Endorsements - Meaning, Essentials and Kinds of Endorsement.
- IV. **Banking Operations** (12 hours): Collecting Banker – Meaning, Duties and Responsibilities of Collecting Banker, Holder for Value, Holder in Due Course, Statutory Protection to Collecting Banker; Paying Banker – Meaning, Precautions, Statutory protection to the Paying Banker, Dishonor of Cheques, Grounds for Dishonor, and Consequences of wrongful Dishonor of Cheques.
- V. **Banking** (8 hours): New Technology in Banking, e-Services, Debit and Credit Cards, Internet Banking, ATM, Electronic Fund Transfer, MICR, RTGS, NEFT, DEMAT. e-Banking, Core Banking and Mobile Banking.

Skill Development Activities:

- (1) Collect and fill account opening form of SB Account or Current Account
- (2) Collect and fill pay in slip of SB Account or Current Account
- (3) Draw specimen of Demand Draft
- (4) Draw different types of endorsement of cheques
- (5) Draw specimen of Travellers Cheques/Gift cheques/Credit cheques
- (6) List various customer services offered by atleast two banks of your choice

Recommended Books for Reference:

- (1) Gordon and Natarajan, Banking Theory Law and Practice, HPH
- (2) S. P Srivastava, Banking Theory and Practice, Anmol Publications
- (3) Tandan M.L, Banking Law and Practice in India, Indian Law House
- (4) Sheldon H.P, Practice and Law of Banking
- (5) K. Venkataramana, Banking Operations, SHBP
- (6) Kothari N. M, Law and Practice of Banking
- (7) Neelam C Gulati, Principles of Banking Management
- (8) Maheshwari. S.N, Banking Law and Practice, Vikas Publication
- (9) Shekar. K.C, Banking Theory Law and Practice, Vikas Publication
- (10) Dr. Alice Mani, Banking Law and Operation, SBH

B.Com, Semester – IV
Course – 405: Computer Applications in Business

Course Objective: To enable the students to learn the Accounting Package Tally and SQL Programs.

Pedagogy: combination of lectures, assignments, practical and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction** (10 hours): Meaning and Definition, Characteristics of Computers, Types of Computers, Application of Computers in Business Operating System – Meaning and Functions of Operating System; Introduction to Windows OS, Computer Memory – Primary and Secondary, RAM and ROM.
- II. **Tally ERP 9.0** (14 hours): Introduction, Features, Advantages, Basic Rules - Real, Personal and Nominal Accounts, Assets and Liabilities, Debtors and Creditors, Menus in Tally, Company Creation, Company Info Menu, Creating Inventory of Products, Company Features (F11) and Configuration of Tally (F12), Gateway of Tally Menu, Master, Transaction, Import and Report.
- III. **Software Support for GST** (8 hours): Introduction, Features, Concept, Supporting Software, GST Working Principles in Tally, Power and Functions, GST Group Creation in Tally, GST adapting in Goods or Stock Creation Section, Creating CGST, SGST, IGST, Ledgers, and GST Entry System in Tally.
- IV. **Accounting Ledger and Vouchers** (12 hours): Predefined Accounting Groups, Primary Groups and Sub Groups, Steps for Creating - Alter and Delete Ledgers and Groups, Types of Ledgers, Types of Vouchers, Rules of Vouchers Entry, Balance Sheet, Profit and Loss Account, Trial Balance, Stock Summary, Computation of GST and TDS, and Exercises for making Voucher Entries.
- V. **Introduction to ORACLE** (14 hours): SQL Meaning, Concepts, Commands, Data Definition Commands, Data Manipulation Commands, SQL*Plus Editing Commands, Create Table, Insert Integrity Constraints, Primary Key, Secondary Key, Aggregate Functions, Select, Delete Form, and Update Order Commands.
- VI. **SQL *Plus Reports** (6 hours): Additional Operators: Like Between, in, Referential Integrity, on Delete Cascade, Join Operation - Inner Join, Outer Join, Alter Table, SQL Clauses - Where Clause, Order By, Group by Clause, Having Clause, Sub Queries, Introduction to PL/SQL, and Simple Programs.

Skill Development Activities:

- (1) Write steps for creating a new company in Tally
- (2) Solve the two exercise problems with GST
- (3) Simple Programs - Mathematical Calculation, Simple and Compound Interest, Area of Circle, Triangle, Biggest and Smallest number
- (4) Write down the student data base table in SQL Query
- (5) Steps for creating GST in Tally with example

Recommended Books for Reference:

- (1) Ashok K Nandani, Advanced Tally 9.0 ERP, 2017 Edition.
- (2) Niranjana Shrivastava, Computer Application In Management (Dreamtech Press)
- (3) P. Mohan, Computer Application Business (Himalaya Publication)
- (4) Sanjay Saxena, A First Course in Computers (Vikas Publishing House)
- (5) Ivan Bayross: Oracle – 7 (BPB Publications)

- (6) S.S Gulshan, Business Law
- (7) S.C. Sharma, Business Law, I.K International Publishers
- (8) Tulsion Business Law, TMH

B.Com, Semester – IV
Course – 407: Indian Constitution

Course Objective: To acquaint students with essential knowledge about Indian Constitution

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit **Course Inputs**

- I. **Framing of the Constitution and Major Features** (14 hours): Constituent Assembly at Work, Preamble and Salient Features, Citizenship, Fundamental Rights, Directive Principles of State Policy, and Fundamental Duties.
- II. **Union and State Legislatures** (16 hours): Composition, Powers and Functions; Presiding Officers, Law Making Process, Committees of Parliament, Decline of Legislatures, and Reforms.
- III. **Union and State Executive** (16 hours): President and Vice-President – Elections, Powers and Functions; Prime Minister and Council of Ministers – Powers and Functions; Governor, Chief Minister and Council of Ministers – Powers and Functions; and Debate over Parliamentary and Presidential Forms of Government.
- IV. **Judiciary** (14 hours): Supreme Court and High Courts – Composition, Jurisdiction and Functions; and Judicial Activism.

Skill Development Activities:

- (1) List out the powers and functions of different levels of government
- (2) Understand the Union-State relations in India

Recommended Books for Reference:

- (1) D.D. Basu, Introduction to the Indian Constitution
- (2) A.S. Narang, Indian Constitution, Government and Politics
- (3) Nani Palkhivala, We, the People, UBS Publishers, New Delhi
- (4) A.G. Noorani, Indian Government and Politics
- (5) J.C. Johari, Indian Government and Politics Vol. I and II, Vishal, New Delhi
- (6) Gran Ville Austin, The Indian Constitution – Corner Stone of a Nation, Oxford, New Delhi
- (7) M.U. Pylee, Constitutional Government in India
- (8) K.K. Ghai, Indian Constitution

B.Com, Semester – V
Course – 501: Financial Management

Course Objective: To acquaint students with the principles of mobilizing and utilizing financial resources by the industrial enterprises

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit **Course Inputs**

- I. **Introduction to Financial Management** (10 hours): Introduction – Meaning of Finance, Business Finance, Finance Function, Aims of Finance Function; Organization Structure of Finance Department, Financial Management, Goals of Financial Management, Financial Decisions, Role of Financial Manager, Financial Planning - Steps in Financial Planning, Principles of sound Financial Planning, and Factors influencing sound Financial Plans.

- II. **Time Value of Money** (12 hours): Introduction – Meaning and Definition, Need, Future Value (Single Flow – Uneven Flow and Annuity), Present Value (Single Flow – Uneven Flow and Annuity), Doubling Period, Concept of Valuation - Valuation of Bonds, Debentures and Shares and Simple Problems.
- III. **Capital Structure** (12 hours): Introduction – Meaning of Capital Structure, Factors influencing Capital Structure, Optimum Capital Structure, Computation and Analysis of EBIT, EBT, EPS, Leverages and Simple Problems.
- IV. **Capital Budgeting** (16 hours): Introduction – Meaning and Definition of Capital Budgeting, Features, Significance, Process, Techniques - Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Profitability Index, and Simple Problems.
- V. **Dividend Policy** (8 hours): Introduction – Meaning and Definition, Determinants of Dividend Policy, Types of Dividends, Bonus Share, Dividend Theories - M.M Model, Walter's Model and Gordon's Model and Problems.
- VI. **Working Capital Management** (6 hours): Introduction, Concept of Working Capital, Significance of adequate Working Capital, Evils of excess or inadequate Working Capital, Determinants of Working Capital, Sources of Working Capital and Problems on determination of Working Capital.

Skill Development Activities:

- (1) Draw the organization chart of finance function of a company
- (2) Evaluate the NPV of an investment made in any one of the capital projects with imaginary figures for five years
- (3) Capital structure analysis of companies in different industries
- (4) Using imaginary figures, prepare an estimate of working capital requirements
- (5) Calculate dividend under MM Model with imaginary figures

Recommended Books for Reference:

- (1) Dr. B. Mariyappa, Financial Management, HPH
- (2) S N Maheshwari, Financial Management, Sultan Chand
- (3) Dr. Aswathanarayana T, Financial Management, VBH
- (4) K. Venkataramana, Financial Management, SHBP
- (5) Roy, Financial Management, HPH
- (6) Khan and Jain, Financial Management, TMH
- (7) S. Bhat, Financial Management
- (8) Sharma and Sashi Gupta, Financial Management, Kalyani Publication
- (9) I M Pandey, Financial Management. Vikas Publication
- (10) Prasanna Chandra, Financial Management, TMH
- (11) P.K Simha, Financial Management
- (12) M. Gangadhar Rao and Others, Financial management

B.Com, Semester – V
Course – 502: Income Tax – I

Course Objective: To acquaint students with the application with principles and provisions of IT Act 1961 relating to assessment

Pedagogy: Combination of lectures, assignments and group discussions.

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Brief History of Indian Income Tax** (10 hours): Brief History of Income Tax, Definition, Assessment Year, Previous Year (including Exceptions), Assesse, Person,

- Income, Casual Income, Gross Total Income, Agricultural Income - Meaning and Classification of Capital and Revenue.
- II. **Exempted Income** (12 hours): Introduction, Exempted Incomes U/S 10 - restricted to Individual Assesse.
 - III. **Residential Status** (12 hours): Residential Status of an Individual, Determination of Residential Status, Incidence of Tax and Problems.
 - IV. **Income from Salary** (16 hours): Meaning, Definition, Basis of Charge, Advance Salary, Arrears of Salary, Allowances, Perquisites, Provident Fund, Profits in Lieu of Salary, Gratuity, Commutation of Pension, Encashment of Earned Leave, Compensation for Voluntary Retirement; Deductions from Salary U/S 16 and Problems on Income from Salary.
 - V. **Deduction** (8 hours): Under Sections 80C to 80U--80C, 80CCD, 80D, 80DD, 80E, 80G, 80GG, 80GGA, 80QQB, 80U and Problems on 80 C to 80 G only.
 - VI. **Income Tax Authorities** (6 hours): Income Tax Authorities - Powers and Functions of CBDT, CIT and A.O.

Skill Development Activities:

- (1) Form No. 49A (PAN) and 49B
- (2) Filling of Income Tax Returns
- (3) List of enclosures to be made along with IT returns (with reference to salary)
- (4) Preparation of Form 16
- (5) Computation of Income Tax and the Slab Rates
- (6) Computation of Gratuity

Recommended Books for Reference:

- (1) Dr. B. Mariyappa, Income Tax – I, HPH
- (2) Dr. Vinod K. Singhanian: Direct Taxes – Law and Practice, Taxman Publication
- (3) B.B. Lal: Direct Taxes, Konark Publisher (P) ltd.
- (4) Dr. Mehrotra and Dr. Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication
- (5) Dinakar Pagare: Law and Practice of Income Tax, Sultan Chand and Sons
- (6) Gaur and Narang, Income Tax
- (7) Dr. V. Rajesh Kumar and Dr. R. K. Sreekantha, Income Tax – I, Vittam Publications
- (8) 7 Lectures, Income Tax – I, VBH

B.Com, Semester – V**Course – 503: Business Statistics – I**

Course Objective: To acquaint students with fundamental techniques and tools of business statistics

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Statistics** (10 hours): Meaning, Definitions, Functions, Scope and Limitations of Statistics and Distrust of Statistics.
- II. **Data and its Collection** (12 hours): Types of Data – Primary and Secondary Data – Methods for Collection of Primary Data – Sources of Secondary Data – Classification – Meaning and Types; Tabulation – Meaning, Rules for Construction of Tables, Parts of Statistical Table and Problems on Tabulation.
- III. **Diagrammatic and Graphic Representation of Statistical Data** (14 hours): Meaning, Types of Diagrams, Simple, Multiple, Subdivided and Percentage,

- Histogram – Location of Mode through Histogram and Frequency Polygon; and Ogive Curves – Location of Median and Quartiles through Ogive Curves.
- IV. **Measures of Central Tendency** (16 hours): Meaning and Definition, Types of Averages – Arithmetic Mean (Simple and Weighted), Median, Mode (excluding missing Frequency problems).
- V. **Measures of Dispersion** (6 hours): Meaning, Absolute and Relative Measures of Dispersion, Types of Dispersion – Range, Quartile Deviation, Standard Deviation, and Co-Efficient of each Method.
- VI. **Skewness** (6 hours): Meaning, Types of Skewness, Measures of Skewness, Absolute and Relative Measures of Skewness, Karl Pearson's Coefficient of Skewness and Bowley's Coefficient of Skewness.

Skill Development Activities:

- (1) Draw a blank table showing different attributes
- (2) Collect marks scored by 50 students in an examination and prepare a frequency distributions table
- (3) Collect data relating to prices of shares of two companies for ten days and ascertain which company's share prices is more stable
- (4) Collect the run scored by the two batsmen in ten one-day international cricket matches, find who is better run getter and who is more consistent
- (5) Select 10 items of daily-consumed products and collect base year quantity, base year price and current year price. Calculate Cost of Living Index

Recommended Books for Reference:

- (1) Anand Sharma, Statistics For Management, HPH
- (2) S P Gupta: Statistical Methods- Sultan Chand, Delhi
- (3) D.P Apte, Statistical Tools for Managers
- (4) Dr. B N Gupta, Statistics (Sahitya Bhavan), Agra
- (5) S.C Gupta: Business Statistics, HPH
- (6) N.V.R Naidu : Operation Research I.K. International Publishers
- (7) Ellahance: Statistical Methods, Kitab Mahal
- (8) Sanchethi and Kapoor: Business Mathematics, Sultan Chand
- (9) Veerachamy: Operation Research I.K. International Publishers
- (10) S. Jayashankar: Quantitative Techniques for Management
- (11) Chikoddi and Satya Prasad: Quantitative Analysis for Business Decision, HPH
- (12) Dr. Alice Mani: Quantitative Analysis for Business Decisions - I, SBH

B.Com, Semester – V

Course – 504: Cost Accounting

Course Objective: To acquaint students with elements of cost and also the reconciliation procedure

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Cost Accounting** (8 hours): Meaning and Definition of Cost, Costing, Cost Accounting and Cost Accountancy, Objectives, Scope, Advantages and Limitations of Cost Accounting, Differences between Financial Accounting and Cost Accounting, Methods and Techniques of Cost Accounting.
- II. **Elements of Cost** (12 hours): Cost Unit, Cost Centre, Classification of Costs, Problems on Cost Sheet (including Job and Batch Cost Sheet), Tenders and

Quotations.

- III. **Material Cost Control** (12 hours): Materials - Meaning and Types, Material Cost Control - Meaning and Objectives, Purchase of Materials – Centralized and Decentralized Purchasing, Purchase Procedure, Stores Control - Meaning and Techniques, Fixation of Stock Levels, EOQ, ABC Analysis, VED Analysis, Just in Time, Perpetual Inventory System, Bin Card, Stores Ledger, Pricing of Material Issues - FIFO, LIFO, Simple Average and Weighted Average Methods, and Problems thereon.
- IV. **Labour Cost Control** (12 hours): Labour - Meaning and Types; Cost Control, Time Keeping and Time Booking, Treatment of Idle Time and Over Time, Labour Turnover, Methods of Wage Payment - Time Rate, Piece Rate and Incentives Plans - Halsey Plan, Rowan Plan, Emerson's Efficiency Plan; Statement of Wage Sheet, and Problems thereon.
- V. **Overhead Cost Control** (12 hours): Meaning, Classification of Overheads, Allocation and Apportionment of Overheads, Primary Overhead Distribution Summary, Secondary Overhead Distribution Summary, Re-apportionment of Overheads - Direct Distribution, Step Ladder Method; Absorption of Overheads – Methods of Absorption - Problems on Allocation, Apportionment, Re-apportionment and Absorption of Overhead Expenses including Machine Hour Rate.
- VI. **Reconciliation of Cost and Financial Accounts** (8 hours): Meaning of Reconciliation, Need for Reconciliation, Reasons for differences in Profit or Loss shown by Cost Accounts and Financial Accounts, and Problems on Reconciliation Statement including Memorandum Reconciliation Account.

Skill Development Activities:

- (1) Identification of elements of cost in services sector by visiting any service provider/ providing unit
- (2) Cost estimation for making a proposed product
- (3) Draft the specimen of any two documents used in material account
- (4) Collection and classification of overheads in an organization on the basis of functions
- (5) Prepare a reconciliation statement with imaginary figures

Recommended Books for Reference:

- (1) J. Made Gowda, Cost Accounting, Himalaya Publishing House
- (2) M V Shukla – Cost and Management Accounting
- (3) N.K. Prasad: Cost Accounting, Books Syndicate Pvt. Ltd.
- (4) Nigam and Sharma: Cost Accounting, HPH
- (5) Khanna Pandey and Ahuja – Practical Costing, S Chand
- (6) Soundarajan A and K. Venkataramana, Cost Accounting, SHBP

B.Com, Semester – V

Course – 505: Advanced Accounts

Course Objective: To acquaint students with accounting for corporate restructuring

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Mergers and Acquisitions** (22 hours): Meaning of Amalgamation and Acquisition, Types of Amalgamation – Amalgamation in the nature of Merger – Amalgamation in the nature of Purchase - Methods of Purchase Consideration – Calculation of Purchase Consideration (Ind AS 103) (Old AS14), Net Asset Method - Net Payment Method,

Accounting for Amalgamation - Entries and Ledger Accounts in the Books of Transferor Company and Transferee Company and Preparation of New Balance Sheet (Vertical Format).

- II. **Internal Reconstruction** (10 hours): Meaning – Objective – Procedure – Form of Reduction – Passing of Journal Entries – Preparation of Reconstruction Accounts – Preparation of Balance Sheet after Reconstruction (Vertical Format) and Problems.
- III. **Holding Company Accounts** (16 hours): Meaning of Holding Company and Subsidiary Companies – Concepts of Minority Interest – Majority Interest – Capital Profit – Revenue Profit – Cost of Control – Unrealized Profit included in Stock and Problems on Holding Company Accounts (excluding Cross and Chain Holding).
- IV. **Investment Accounting** (12 hours): Introduction – Classification of Investment – Cost of Investment – Cum-Interest and Ex-Interest – Securities – Bonus Shares - Right Shares – Disposal of Investment – Valuation of Investments – Procedures of Recording Shares and Problems.
- V. **Human Resources Accounting** (4 hours): Meaning, Objectives, Methods, Advantages and Limitations and problems thereon.

Skill Development Activities:

- (1) Calculation of purchase consideration with imaginary figures
- (2) List any five cases of amalgamation in the nature of merger or acquisition of Joint Stock Companies
- (3) List out legal Provisions in respect of internal reconstruction
- (4) Narrate the steps for preparation of consolidated balance sheet

Recommended Books for Reference:

- (1) Dr. B. Mariyappa – Advanced Corporate Accounting, HPH
- (2) Arulanandam and Raman; Corporate Accounting-II, HPH
- (3) Roadmap to IFRS and Indian Accounting Standards by CA Shibarama Tripathy
- (4) S.N. Maheswari , Financial Accounting, Vikas
- (5) Soundarajan A and K. Venkataramana, Advanced Corporate Accounting, SHBP
- (6) RL Gupta, Advanced Accountancy, Sultan Chand
- (7) K.K Verma – Corporate Accounting
- (8) Jain and Narang, Corporate Accounting
- (9) Tulsian, Advanced Accounting,
- (10) Shukla and Grewal – Advanced Accountancy, Sultan Chand

B.Com, Semester – V

Course – 506: Goods and Services Tax

Course Objective: To equip students with the principles and provisions of Goods and Services Tax (GST) - implemented from 2017 under the notion of One Nation, One Tax and One Market. And also to provide an insight into practical aspects and apply the provisions of GST laws to various situations.

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Goods and Services Tax (GST)** (8 hours): Introduction to GST, Meaning and Definition, Objectives and basic scheme of GST, Salient features of GST – Subsuming of taxes – Benefits of implementing GST – Constitutional amendments - Structure of GST (Dual Model) – Central GST – State/Union Territory GST – Integrated GST; GST Council - Structure, Powers and Functions, and

Provisions for amendments.

- II. **Goods and Services Act, 2017** (8 hours): CGST Act, SGST Act (Karnataka State), and IGST Act - Salient features of CGST Act, SGST Act (Karnataka State), IGST Act. Meaning and Definition: Aggregate turnover, Adjudicating authority, Agent, Business, Capital goods, Casual Taxable Person, Composite supply, Mixed supply, Exempt supply, Outward supply, Principal Supply, Place of Supply, Supplier, Goods, Input Service Distributor, Job work, Manufacture, Input tax, Input tax credit, Person, Place of business, Reverse charge, Works contract, Casual taxable person, Non-resident person; Export of goods or services, Import of goods or services, Intermediary, Location of supplier of service, Location of recipient of service and simple problems on Composite Supply and Mixed Supply
- III. **Procedure and Levy under GST** (32 hours): Registration under GST, Procedure for registration, Persons liable for registration, Persons not liable for registration, Compulsory registration, Deemed registration, Special provisions for Casual taxable persons and Non-resident taxable persons; Exempted goods and services, Rates of GST.
 Procedure relating to Levy (CGST and SGST): Scope of supply, Tax liability on Mixed and supply, Time of supply of goods and services Value of taxable supply, Computation of taxable value and tax liability on Goods and Services.
 Procedure relating to Levy: (IGST): Inter-state supply, intra-state supply, Zero rates supply, Value of taxable supply – Computation of taxable value and tax liability; Input tax Credit - Eligibility, Apportionment, Inputs on capital goods, Distribution of credit by Input Service Distributor (ISD) – Transfer of Input tax credit and simple problems on utilization of input tax credit.
- IV. **Assessment and Returns** (10 hours): Meaning, types of assessment - First return, Claim of input tax credit, Matching reversal and reclaim of input tax credit, Annual return and Final return and Problems on Assessment of tax and tax liability.
- V. **GST and Technology** (6 hours): GST Network: Structure, Vision and Mission, Powers and Functions; Goods and Service Tax Suvidha Providers (GSP): Concept, Framework and Guidelines and architecture to integrate with GST system; and GSP Eco System. (theory only).

Skill Development Activities:

- (1) Collect GST Returns form and fill with imaginary figures
 GSTR-3B (Monthly Returns)
 GSTR-1 (Details of Outward supplies of Goods or Services)
 GSTR-2 (Inward Supplies received by tax payer)
- (2) Visit your locality shops and collect information relating to tax rate applicable to them
- (3) Collect information about different tax rates for goods and services and write five examples for each tax rate
- (4) Visit Bank and Insurance Company, collect information relating to GST applicable to them for different services
- (5) Collect information relating to RCM (Reverse Charge Mechanism) for different expenditures

Recommended Books for Reference:

- (1) GST Act 2017, Karnataka Law and Journal Publications
- (2) GST, Taxman Publications
- (3) Introduction to GST, Department of GST New Delhi
- (4) Introduction to GST, Dr B G Bhaskar

- (5) Introduction to GST, Dr M Mariyappa

B.Com, Semester – V

Course – 508: Logical and Analytical Reasoning

Course Objective: To acquaint students with reasoning and analytical ability

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 2 Maximum Marks: 50 Examination Duration: 1½ hours

Unit Course Inputs

- I. **Logical Reasoning** (6 hours): Venn Diagram, Logical Sufficiency and Seating Arrangement.
- II. **Intellectual Reasoning** (7 hours): Blood Relations, D Calendar, Series, Coding and Decoding.
- III. **Verbal and Non-verbal Reasoning** (4 hours): Verbal Alphabetical Analogy, Puzzles and Abstract Reasoning.
- IV. **Analytical Reasoning** (5 hours): Cause and Effective Conclusions, Statement and Arguments and Statement and Assumptions.
- V. **Mathematical Reasoning** (6 hours): Problems related to Wages, Speed – Distance, Percentage and Average, Ratio and Proportion.
- VI. **Data Interpretation** (4 hours): Problems on Tables and Graph.

Skill Development Activities:

- (1) Draw Venn Diagram with imaginary Figures
- (2) Draw Coding and Decoding programs with imaginary figures
- (3) Calculate speed of a train with imaginary figures
- (4) Draw Tables and Chart with Imaginary figures

Recommended Books for Reference:

- (1) Agarwal, Quantitative Reasoning.
- (2) Dr. Giridhar K.V. Logical and Analytical Reasoning, 5th Edition, College Book House
- (3) M. N. Tyra, Speed Mathematics

B.Com, Semester – VI

Course – 601: International Financial Reporting Standards

Course Objective: To acquaint students with recent accounting standards

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit Course Inputs

- I. **Introduction to IFRS** (8 hours): Meaning and Scope of IFRS, Need for IFRS, GAAP Vs IAS, IAS Vs IFRS, Nature and Operations of IASB and IFRIC, Status and use of IFRS around the World.
- II. **Profit Presentation** (8 hours): Presentation of Financial Statements (IAS - 1) Revenue (IAS - 18) and Accounting Policies, Changes in Accounting Estimates and Errors (IAS - 8)
- III. **Group Accounting** (12 hours): Consolidated Financial Statements and Accounting for Investment in Subsidiaries (IAS - 27), Accounting for Investments in Associates (IAS - 28), Joint Ventures (IAS - 31), and Business Combinations (IFRS - 3)
- IV. **Disclosure** (14 hours): Related Party Disclosures (IAS - 24), Earning per Share (IAS - 33) and Interim Financial Reporting (IAS - 34), and First Time Adoption of IFRS (IFRS - 1)
- V. **Asset Recognition and Measurement** (14 hours): Property, Plant and Equipment

(IAS - 16), Intangible Assets (IAS - 38), Investment Property (IAS - 40), Inventories (IAS - 2), and Leases (IAS - 17).

- VI. **Accounting for Liabilities** (8 hours): Share Based Payment (IFRS - 2), Provisions, Contingent Assets and Contingent Liabilities (IAS - 37), and Events after the Reporting Period (IAS - 10).

Skill Development Activities:

- (1) Prepare a note on convergence of Indian Accounting Standards with IFRS
- (2) Analysis of published financial statements for at-least two types of stakeholders
- (3) Comment on recent developments/exposure draft in IFRS
- (4) Preparation of notes to accounts for non-current assets
- (5) Assignment on social reporting
- (6) Preparation of Consolidated Financial Statement of any two existing companies
- (7) Disclosure of change in equity in the annual reports of any two select companies

Recommended Books for Reference:

- (1) IFRSs, Taxman Publications (Blue book)
- (2) IFRS, Barry Larking, Taxman Publications
- (3) IFRS, T.P. Ghosh, Taxman Publications
- (4) IFRS and Ind AS, Kamal Garg, Bharat publishers
- (5) International Accounting, Mohapatra A.K. Das

B.Com, Semester - VI
Course – 602: Income Tax – II

Course Objective: To acquaint students about the computation of different sources of income

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Income from House Property** (14 hours): Basis of Charge – Deemed Owners – Exempted Incomes from House Property – Annual Value – Determination of Annual Value – Treatment of Unrealized Rent – Loss Due to Vacancy – Deductions from Annual Value and Problems on Income from House Property.
- II. **Profits and Gains of Business and Profession** (Individual Assesse) (16 hours): Meaning and Definition of Business, Profession – Vocation - Expenses expressly Allowed – Allowable Losses – Expenses expressly Disallowed – Expenses Allowed on Payment Basis - Problems on Business relating to Sole Trader and Problems on Profession relating to Chartered Accountant, Advocate and Medical Practitioner.
- III. **Capital Gains** (12 hours): Basis of Charge – Capital Assets – Transfer of Capital Assets – Computation of Capital Gains –Exemptions U/S 54, 54B, 54D, 54EC, 54F and Problems on Capital Gains.
- IV. **Income from other Sources** (10 hours): Incomes – Taxable under the head ‘Other Sources’ – Securities – Kinds of Securities – Rules for Grossing Up – Ex-Interest Securities – Cum-Interest Securities – Bond Washing Transactions and Problems on Income from Other Sources.
- V. **Set-off and Carry Forward of Losses, Computation of Total Income and Tax Liability** (8 hours): Meaning – Provision for Set-off and Carry Forward of Losses (theory only); Computation of Total Income and Tax Liability of an Individual Assessee (excluding Salary Income).
- VI. **Filing of Returns and Assessment Procedure** (4 hours): PAN, TAN, E-Filing and IT Challan.

Skill Development Activities:

- (1) Table of rates of Tax deducted at source
- (2) Filing of IT returns of individuals
- (3) List of enclosures for IT returns
- (4) Due date for filing of returns
- (5) Income tax proposal as per the recent union budget

Recommended Books for Reference:

- (1) Dr. B. Mariyappa, Income Tax- II, HPH
- (2) Dr. Vinod K. Singhanian: Direct Taxes – Law and Practice, Taxman publication
- (3) B.B. Lal: Direct Taxes, Konark Publisher (P) ltd
- (4) Dr. Mehrotra and Dr. Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication
- (5) Dinakar Pagare: Law and Practice of Income Tax, Sultan Chand and sons
- (6) Gaur and Narang: Income Tax
- (7) Lectures on Income Tax – I, VBH
- (8) Dr. V. Rajesh Kumar and Dr. R. K. Sreekantha: Income Tax – I, Vittam Publications.

B.Com, Semester – VI**Course – 603: Business Statistics – II**

Course Objective: To acquaint students about practical application of statistical tools

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Correlation Analysis** (14 hours): Meaning – Methods of Studying Correlation, Karl Pearson's Co-efficient of Correlation (Simple Correlation and Table Correlation) and Probable Error.
- II. **Regression Analysis** (18 hours): Meaning - Correlation Vs Regression, Determination of Regression Co-efficient, Framing Regression Equations, Simple Regression and Regression for Grouped Data.
- III. **Index Numbers** (12 hours): Meaning and Definition – Uses – Classification – Construction of Index Numbers – Methods of constructing Index Numbers – Simple Aggregative Method – Simple Average of Price Relative Method – Weighted Index Method – Fisher's Ideal Method (including TRT and FRT) – Consumer Price Index and Problems.
- IV. **Interpolation and Extrapolation** (12 hours): Meaning – Utility – Algebraic Methods – Binomial and Newton's Methods only.
- V. **Association of Attributes** (4 hours): Meaning – Correlation Vs Association of Attributes, Methods of Studying Association – Yule's Method only
- VI. **Statistical Quality Control** (4 hours): Meaning – Objectives – Control Charts and their Uses, Types of Control Charts, Construction Charts, Construction of Mean and Range Charts only.

Skill Development Activities:

- (1) Collect age statistics of 10 newly married couples and compute correlation coefficient
- (2) Collect age statistics of 10 newly married couples and compute regression equations; estimate the age of bride when age of bridegroom is given
- (3) Select 10 items of daily consumed products and collect base year quantity, base year price and current year price. Calculate Cost of Living Index
- (4) Collect the sales or production statistics of a company for five years and extrapolate

the production or sales for the 6th year

- (5) Draw a mean chart of any company to ascertain the quality of the product

Recommended Books for Reference:

- (1) Anand Sharma : Statistics for Management, HPH
- (2) S P Gupta: Statistical Methods- Sultan Chand, Delhi
- (3) D.P Apte, Statistical Tools for Managers
- (4) Dr. B N Gupta: Statistics, Sahitya Bhavan, Agra.
- (5) S.C Gupta: Business Statistics, HPH
- (6) N.V.R Naidu: Operation Research I.K. International Publishers
- (7) Ellahance: Statistical Methods, Kitab Mahal
- (8) Sanchethi and Kapoor: Business Mathematics, Sultan Chand
- (9) Veerachamy: Operation Research I.K. International Publishers
- (10) S. Jayashankar: Quantitative Techniques for Management
- (11) Chikoddi and Satya Prasad: Quantitative Analysis for Business Decision, HPH
- (12) Dr. Alice Mani: Quantitative Analysis for Business Decisions - I, SBH

B.Com, Semester - VI

Course – 604: Cost Accounting - Methods and Techniques

Course Objective: To acquaint students about methods and techniques of cost accounting

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Contract Costing** (10 hours): Meaning, Nature and Types of Contract, Difference between Contract Costing and Job Costing, Concepts of Escalation Clause, Retention Money, Profit on Incomplete Contracts and Problems.
- II. **Process Costing** (12 hours): Meaning, Nature and Applicability, By-Products and Joint Products and Problems on Process Costing including Joint Products and By-Products.
- III. **Operating Costing** (10 hours): Meaning and Applicability of Operating Costing, Operating Cost and its Classification, Problems on Preparation of Operating Cost Sheet (only Transport Undertakings).
- IV. **Marginal Costing** (14 hours): Meaning, Basic Concepts, Assumptions, Marginal Cost Statements, Contribution, BE Analysis, P/V Ratio, BEP, Margin Of Safety and Problems.
- V. **Standard Costing** (10 hours): Meaning, Definitions, Differences between Standard Costing and Budgetary Control, Analysis of Variances, Problems on Material Cost Variance - Material Price Variance, Material Usage Variance; Labour Cost Variance, Labour Rate Variance, and Labour Efficiency Variance.
- VI. **Activity Based Costing and Learning Curve Theory** (8 hours): Concept of Activity Based Costing, Cost Drivers and Cost Pools, Allocation of Overheads under ABC – Characteristics, Implementation and Benefits of ABC; Concept and Phases of Learning Curve, Graphical Representation, Learning Curve Applications and Factors affecting Learning Curve (theory only)

Skill Development Activities:

- (1) Listing of industries located in your area and methods of costing adopted by them
- (2) List out materials used in any two organizations
- (3) Preparation with imaginary figures composite job cost statement
- (4) Preparation of activity based cost statement

- (5) Prepare a chart showing the apportionment of overheads under ABC

Recommended Books for Reference:

- (1) J. Madegowda, Cost Accounting, Himalaya Publishing House
- (2) J. Madegowda, Marginal Costing for Managerial Decisions, Prateeksha Publications
- (3) J. Madegowda, Cost Management, Himalaya Publishing House
- (4) S P Iyengar, Cost Accounting
- (5) Nigam and Sharma, Advanced Costing
- (6) B.S. Raman, Cost Accounting
- (7) Dr. B. Mariyappa, Cost Accounting Methods - HPH
- (8) M.N. Arora, Cost Accounting
- (9) Ashish K Bhattacharyya: cost accounting for business managers
- (10) N. Prasad, Costing
- (11) Palaniappan and Hariharan: Cost Accounting, I.K. International Publishers
- (12) Jain and Narang, Cost Accounting
- (13) Ravi M. Kishore – Cost Management
- (14) Charles T Horngren, George Foster, Srikant M. Data, Cost Accounting: A Managerial Emphasis
- (15) Rathnam: Cost Accounting

B.Com, Semester - VI

Course – 605: Management Accounting

Course Objective: To acquaint students with necessary knowledge of practical aspects of Management Accounting

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 5 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Management Accounting** (10 hours): Meaning and Definition of Management Accounting, Scope and Objectives of Management Accounting – Differences between Management Accounting and Financial Accounting – Management Accounting and Cost Accounting and Limitations of Management Accounting.
- II. **Analysis of Financial Statements** (10 hours): Meaning and Definition of Financial Statements – Financial Analysis – Types of Financial Analysis, Techniques of Financial Analysis - Common Size Statements, Comparative Statements and Trend Analysis and Problems.
- III. **Ratio Analysis** (14 hours): Meaning and Objectives – Types of Ratios – Re-arrangement of Income Statements and Balance Sheet – (A) Profitability Ratios – GP Ratio, NP Ratio, Operating Ratio – Operating Profit Ratio - Return on Capital Employed Ratio – EPS; (B) Turnover Ratios – Debtors Turnover Ratio – Creditors Turnover Ratio; (C) Financial Ratios, Current Ratio - Liquidity Ratio, Debt-Equity Ratio, Capital Generating Ratio and Advantages and Limitations of Ratios.
- IV. **Fund Flow Analysis** (10 hours): Meaning, Concepts of Funds – Meaning and Definition of Fund Flow Statements – Uses and Limitations – Procedure for Preparation of Funds Flow Statement – Statement of Changes in Working Capital, Statement of Funds from Operations, and Statements of Sources and Application of Funds.
- V. **Cash Flow Statements** (10 hours): Meaning, Definition, Uses and Limitations- Differences between Fund Flow Statement and Cash Flow Statement – Preparation of Cash Flow Statements (Ind AS - 7): Direct Method and Indirect Method.

VI. **Budgetary Control** (10 hours): Meaning of Budget, Budgeting and Budgetary Control, Types of Budgets, Limitations of Budgetary Control, Problems on Sales Budget and Flexible Budget.

Skill Development Activities:

- (1) Preparation of common size financial statements, trend percentages and comparative financial statements of an organization at least for two years
- (2) Calculation of ratios based on the above financial statements – gross profit ratio, net profit ratio, operation profit ratio, current ratio and operations
- (3) Identify current assets, current liabilities, and non-current liabilities from the above financial statements
- (4) Preparation of fund flow statement and determination fund from operations with imaginary figures
- (5) Preparation of flexible budget with imaginary figures
- (6) Visit an organization, collect information regarding budgets prepared by them, and prepare budget based on the given information

Recommended Books for Reference:

- (1) Advanced Management Accounting: J. Madegowda, 2nded, Himalaya Publishing House
- (2) Management Accounting: J. Madegowda, Himalaya Publishing House
- (3) Management Accounting: Dr. S.P. Gupta
- (4) Management Accounting :M.Y. Khan And P.K. Jain
- (5) Management Accounting: Dr. S.N. Maheshwari
- (6) Management Accounting: B.S. Raman
- (7) Management Accounting; Howard And Brown
- (8) Management Accounting : S.M. Goyal And Dr. Manmohan
- (9) Management Accounting-Dr, B. Mariyappa

B.Com, Semester – VI

Course – 606: Principles and Practice of Auditing

Course Objective: To acquaint students with auditing principles and different dimensions of Auditing

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 3 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Auditing** (12 hours): Meaning, Definition, Objectives, Types of Audit, Advantages and Disadvantages of Audit, Preparation before Commencement of New Audit, Audit Note, Audit Working Paper, Audit Programme, Recent Trends in Auditing, Nature and Significance of Tax Audit, Cost Audit and Management Audit.
- II. **Internal Check** (10 hours): Meaning, Objectives, Fundamental Principles, Internal Check as Regards Wage Payment, Cash Book, Purchases, Cash Sales; Merits of Internal Check, Differences between Internal Check and Internal Audit.
- III. **Vouching** (14 hours): Definition, Importance, Objectives, Routine Checking and Vouching - Types of Vouchers, Vouching Receipts, Cash Sales, Receipts from Debtors, Proceeds of Sales, Sale of Investment, Vouching of Payments, Cash Purchase and Payment to Creditors.
- IV. **Verification and Valuation of Assets and Liabilities** (14 hours): Meaning and Objectives of Verification and Valuation - Position of an Auditor as regards the Valuation of Assets - Verification and Valuation of different Items - Land and

Building, Plant and Machinery, Goodwill – Investments - Stock in Trade, Bills Payable and Sundry Creditors.

- V. **Company Audit and Others** (10 hours): Company Auditor – Appointment – Qualifications - Powers – Duties and Liabilities; Types of Audit Report - Clean and Qualified Report, Audit of Educational Institutions, Audit of Insurance Company and Audit of Cooperative Societies.
- VI. **Audit Standards** (4 hours): Audit of Computerized Accounts - Audits in an EDP - General EDP Controls, EDP Application Controls and Computer Assist Auditing Techniques

Skill Development Activities:

- (1) Draft an audit programme
- (2) Draft an investigation report on behalf of a public limited company
- (3) Visit an audit firm, write about the procedure followed by them in auditing the books of account of a firm
- (4) Formulate internal check system for cash sales
- (5) Prepare qualified/clean audit report

Recommended Books for Reference:

- (1) Auditing - T.R Sharma
- (2) Principles of Auditing - Dr. Nanjgowda
- (3) Principles and Practice of Auditing - M.S Ramaswamy
- (4) Principles and Practice of Auditing –R.G Sexena
- (5) Auditing – B.S Raman
- (6) Practical auditing – B.N Tandon
- (7) Auditing – Kamal Gupta

B.Com, Semester - VI

Course – 608: Soft Skills

Course Objective: To acquaint students with the essential of communication

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 2 Maximum Marks: 50 Examination Duration: 1½ hours

Unit

Course Inputs

- I. **Elements of Communication** (4 hours): Meaning, Importance, Objectives and Principles of Communication, Types and Forms of Communication, Process, Impediments of Effective Communication, and Strategies for Effective Communication.
- II. **Non-verbal Communication**(8 hours): Body Language, Gestures, Postures, Facial Expressions, Dress Codes, Cross Cultural Dimensions of Business Communication, Listening and Speaking, Techniques of Eliciting Response, Probing Questions, Observation, Business and Social Etiquettes.
- III. **Public Speaking** (8 hours): Principles of Effective Speech and Presentations, Technical Speeches and Non-Technical Presentations, Speech of Introduction of a Speaker - Speech of Vote of Thanks - Occasional Speech - Theme Speech; Moderating Programs and Use of Technology
- IV. **Interview Techniques** (6 hours): Importance of Interviews, Art of Conducting and Giving Interviews, Placement Interviews - Discipline Interviews - Appraisal Interviews and Exit Interviews.
- V. **Meetings** (6 Hours): Importance, Meetings Opening and Closing Meetings Participating and Conducting Group Discussions, Brain Storming, and E- Meetings,

Career Counseling, and Resume Preparation.

Skill Development Activities:

- (1) Conduct a mock meeting and draft minutes of the meeting
- (2) Draft a letter of enquiry to purchase a laptop
- (3) Draft your bio-data

Recommended Books for Reference:

- (1) Soft Skills of Personality Development: C.G.G Krishnamacharyulu and Lalitha
- (2) Lesikar, R.V. and Flatley, M.E. Basic Business Communication Skills for Empowering the Internet Generation, TMH, New Delhi.
- (3) Rai and Rai: Business Communication Himalaya Publishing House
- (4) Ludlow, R. and Panton, F. (1998). The Essence of Effective Communications, Prentice Hall of India Pvt. Ltd
- (5) M.S. Rao : Soft Skills – Enhancing Employability I.K. International
- (6) Rao and Das: Communication Skills
- (7) Adair, J. (2003). Effective Communication. Pan McMillan.
- (8) Thill, J.V. and Bovee, G. L, Excellence in Business Communication, TMH, New York.
- (9) Bowman, J.P. and Branchaw, P.P, Business Communications: From Process to Product. Dryden Press, Chicago.
- (10) Sharma S.P and Others, Business Communication
- (11) Rajkumar, Basic of Business Communication
- (12) Banerjee: Soft Skills Business and Professional Communication, I.K. International

Specialization Stream – A: Finance Stream

B.Com, Semester – V

Course – 507A: Advanced Financial Management

Course Objective: To acquaint students with the ways of mobilizing and using of financial resources by industrial enterprises

Pedagogy: Combination of lectures, assignments and group discussions.

Weekly Teaching Hours:4 Maximum Marks: 100 Examination Duration: 3 hours

Unit **Course Inputs**

- I. **Investment Decisions and Risk Analysis** (14 hours): Risk Analysis – Types of Risks – Risk and Uncertainty – Techniques of Measuring Risks – Risk Adjusted Discount Rate Approach – Certainty Equivalent Approach – Sensitivity Analysis - Probability Approach - Standard Deviation and Co-efficient of Variation – Decision Tree Analysis and Problems,
- II. **Sources of Capital** (12 hours): Long Term Sources – Meaning – Equity Shares – Preference Shares – Debentures – Differences between Shares and Debentures – Retained Earnings – Long Term Loans and Loans From Financial Institutions.
- III. **Capital Structure Theories** (10 hours): Introduction – Capital Structure – Capital Structure Theories - Net Income Approach - Net Operating Income Approach - Traditional Approach – MM Approach and Problems.
- IV. **Dividend Theories** (12 hours): Introduction – Irrelevance Theory – MM Model; Relevance Theories - Walter Model - Gordon Model and Problems on Dividend Theories.
- V. **Planning and Forecasting of Working Capital** (14 hours): Concept of Working Capital – Determinants of Working Capital – Estimating Working Capital Needs – Operating Cycle – Cash Management – Motives of Holding Cash – Cash Management

Techniques – Preparation of Cash Budget, Receivables Management – Preparation of Ageing Schedule and Debtors Turnover Ratio; Inventory Management Techniques and Problems on EOQ.

Skill Development Activities:

- (1) Preparation of a small project report of a small business concern covering all components - Finance, Marketing, Production, Human Resources, General administration (any one component can be selected as the title of the report)
- (2) Designing a capital structure for a trading concern
- (3) Preparing a blue print on working capital of a small concern
- (4) Prepare a chart on modes of cash budget
- (5) List out different modes of Dividend Policy
- (6) List out the companies which have declared dividends recently along with the rate of dividend

Recommended Books for Reference:

- (1) Narendra Singh, Advanced Financial Management
- (2) K. Venkataramana, Advanced Financial Management, SHBP.
- (3) Ghousia Khatoon, Mahanada B. C., Advanced Financial Management, VBH
- (4) S N Maheshwari, Financial Management Principles and Practice, Sultan Chand
- (5) Khan and Jain, Financial Management, Tata McGraw Hill
- (6) Sudhindra Bhat, Financial Management, Prentice Hall of India
- (7) Sharma and Sashi Gupta, Financial Management, Kalyani Publication
- (8) I M Pandey, Financial Management, Vikas Publication
- (9) Prasanna Chandra, Financial Management, Tata McGraw Hill
- (10) R.M Srivastava, Financial Management & Policy, Sterling publishers

Specialization Stream – A: Finance Stream

B.Com, Semester - VI

Course – 607A: Security Analysis and Portfolio Management

Course Objective: To acquaint students with investment decisions and portfolio management

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Investment Management** (15 hours): Meaning of Investment – Selection of Investment – Classification of Securities – Risk and Uncertainty – Types of Risks – Risk and Expected Return – Measurement of Portfolio Risk – Benefits of Diversification – Investment Strategies – Types of Companies and Stocks – Matrix Approach in Investment Decision and Investment Avenues
- II. **Security Analysis** (15 hours): Introduction – Fundamental Analysis – Economic Analysis – Industry Analysis – Company Analysis; Technical Analysis – Dow Theory – Advanced Declined Theory and Chartism Assumptions of Technical Analysis.
- III. **Modern Portfolio Theory** (14 hours): Introduction – Mean – Variance Model – Capital Market Line – Market Portfolio – Capital Asset Pricing Model – Security Market Line – Beta Factor – Alpha and Beta Coefficient and Arbitrage Pricing Model.
- IV. **Portfolio Management** (10 hours): Markowitz Model – Sharpe Model – Jensen and Treynor Model.
- V. **Global Markets** (10 hours): Global Investment Benefits - Introduction to ADRs, GDRs, FCCBs, Foreign Bonds, Global Mutual Funds – Relationship between Trends

in Global Markets and Domestic Markets.

Skill Development Activities:

- (1) Prepare an imaginary investment portfolio for salaried man whose income is ` 10 lakhs per annum and estimate savings is ` 2 lakhs per annum
- (2) Make a list of 30 companies which have gone for IPO very recently
- (3) Prepare a statement showing the ups and downs in the BSE index for the last one year

Recommended Books for Reference:

- (1) Avadhani, Investment Analysis and Portfolio Management, HPH
- (2) Preeti Singh - Security Analysis and Portfolio Management, HPH
- (3) K. Venkataramana, Security Analysis and Portfolio Management, SBHP
- (4) Kevin, Investment and Portfolio Management
- (5) Prasanna Chandra, Investment Analysis and Portfolio Management, McGraw-Hill
- (6) Sudhindra Bhat, Security Analysis and Portfolio Management - Fischer and Jordan, Security Analysis and Portfolio Management, Prentice Hall
- (7) A.P. Dash, Security Analysis and Portfolio Management, I.K. Intl
- (8) Rohini Singh, Security Analysis and Portfolio Management
- (9) Punithvathy Pandian, Security analysis & portfolio Management

Specialization Stream – B: Marketing Stream

B.Com, Semester – V

Course – 507B: Product and Sales Management

Course Objective: To acquaint students with adequate knowledge of product and sales management

Pedagogy: Combination of lectures, assignments and group discussions.

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Product Management** (12 hours): Meaning, Definition of Product, Market - Market focused Organization; Functionally focused Organization; Product Management – Facts Vs Fiction; Changes affecting Product Management; and Product Strategy.
- II. **Product Planning and Management** (12 hours): Meaning, Definition and Objectives of Product Planning; Frequent mistakes in Planning; Planning Process; Components of a good Plan; Product Life Cycle; Market Growth; Product Attractiveness - Factors influencing a Product; Threat of New Entrants, Product Differentiation; Bargaining Power of Buyers and Suppliers; Pressure from Substitutes; Environment Analysis; and Product Line Management.
- III. **New Product Development** (12 hours): Meaning, Definition and Organization for New Product Development; Idea Generation and Screening; Concept of Development and Evaluation; New Product Development and Evaluation; Product Modification; Product Variants; Brand Extension; Test Marketing, Evaluation for Market Acceptance; Commercialization and Product Failure.
- IV. **Salesman** (14 hours): Meaning, Definition and Qualities of a good Salesman, Recruitment of Salesmen in the Organization, Product, Knowledge, Planned Selling, Approach - Pre-Approach-Meeting, Objectives, Closing the Sale-Scales Call; Customer Psychology - Buying Motives of our Customer, Effective Speaking, Consumer Products Vs Industrial Products Selling - Trade Relations –Sales Personnel Recruitment, Selection, Training, and Remuneration.

- V. **Sales and Marketing System** (14 hours): Meaning, Definition, Objectives of Sales, Promotion Schemes and Situations in which they Launched. 42 Direct Premiums (Branded Packs, Price Rebates, Quantity Deals, Sampling, *etc*), Criteria for Judging the Success or Failure of Sales Promotion Schemes, What Sales Promotion can achieve and its Limitations; Consumer Contests, Interim Action Premiums (Coupon, Offers, *etc*), Self-Liquidating Premium; Survey of Gift Scheme Window Display, Types of Dealer Promotion Schemes, Wholesale and Retail Trade (Discount and Bonus Incentives for the Trade Sales Promotion and Industrial Products - Merchandising and Display - Sales Aids and Dealers Aids. Marketing System - Marketing Channels Behavioral Process in Marketing Channels, Designing Channels, Channels of Distribution and Promotion, Physical Distribution; and Factors affecting Channel Choice.

Skill Development Activities:

- (1) Select any product and examine the features of channels selected for distribution
- (2) Visit any organization and understand about remuneration and incentives to salesman
- (3) Chart out product planning process
- (4) Chart Sales Promotion schemes of two consumer durable products and two non-consumer durable products
- (5) Identify a product and position it in the market – chart it out

Recommended Books for Reference:

- (1) Lehmann R. Donald & Winer. S. Russell; Product Management; Tata McGraw-Hill Edition; 3rd Edition
- (2) Still R. Richard, Cundiff W. Edward and Govoni A P Norman, Sales Management Decisions, Strategies and Cases; Prentice Hall of India (P) Ltd; New Delhi
- (3) Ramanujam and Majumdar, Product management
- (4) Chunawalla S.A, Product management.
- (5) Aswathappa, Product management
- (6) Verma and Agarwal, Sales management

Specialization Stream – B: Marketing Stream

B.Com, Semester – VI

Course – 607B: Retail Management

Course Objective: To acquaint students about the consumer behavior in retail management

Pedagogy: Combination of lectures, assignments and group discussions.

Weekly Teaching Hours: 4

Maximum Marks: 100

Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Retail Business** (12 hours): Definition – Functions of Retailing - Types of Retailing – Forms of Retail Business Ownership; Retail Theories – Wheel of Retailing – Retail Life Cycle; Retail Business in India: Influencing Factors – Present Indian Retail Scenario and International Perspective in Retail Business.
- II. **Consumer Behavior in Retail Business** (14 hours): Buying Decision Process and its Implications on Retailing – Influence of Group and Individual Factors, Customer Shopping Behaviour, Customer Service and Customer Satisfaction; Retail Planning Process: Factors to consider in preparing a Business Plan – Implementation and Risk Analysis.
- III. **Retail Operations** (12 hours): Factors influencing Location of Store - Market Area Analysis – Trade Area Analysis – Rating Plan Method - Site Evaluation; Retail Operations: Stores Layout and Visual Merchandising, Stores Designing, Space

Planning, Inventory Management, Merchandise Management, and Category Management.

- IV. **Retail Marketing Mix** (16 hours): Introduction; Product: Decisions related to selection of Goods (Merchandise Management Revisited) – Decisions related to Delivery of Service; Pricing: Influencing Factors – Approaches to Pricing – Price Sensitivity - Value Pricing – Markdown Pricing; Place: Supply Channel – SCM Principles – Retail Logistics – Computerized Replenishment System – Corporate Replenishment Policies; Promotion: Setting Objectives – Communication Effects - Promotional Mix; Human Resource Management in Retailing – Manpower Planning – Recruitment and Training – Compensation and Performance Appraisal Methods.
- V. **Impact of Information Technology in Retailing** (10 hours): Non Store Retailing (E-Retailing) - Impact of Information Technology in Retailing - Integrated Systems and Networking – EDI – Bar Coding – Electronic Article Surveillance – Electronic Shelf Labels – Customer Database Management System; Legal aspects in Retailing, Social Issues in Retailing, and Ethical Issues in Retailing.

Skill Development Activities:

- (1) Draw a retail life cycle chart and list the stages
- (2) Draw a chart showing a store operations
- (3) List out the major functions of a store manager diagrammatically
- (4) List out the current trends in e-retailing
- (5) List out the factors influencing in the location of a New Retail outlet

Recommended Books for Reference:

- (1) Suja Nair; Retail Management, HPH
- (2) Karthic – Retail Management, HPH
- (3) S.K. Poddar & others – Retail Management, VBH
- (4) R.S Tiwari ; Retail Management, HPH
- (5) Barry Bermans and Joel Evans: "Retail Management – A Strategic Approach", 8th edition, PHI
- (6) A.J. Lamba, The Art of Retailing, 1st edition, Tata McGraw-Hill, New Delhi
- (7) Swapna Pradhan, Retailing Management, TMH
- (8) K. Venkataramana, Retail Management, SHBP
- (9) James R. Ogden and Denise T., Integrated Retail Management
- (10) A Sivakumar Retail Marketing , Excel Books

Specialization Stream – C: Banking and Insurance Stream

B.Com, Semester – V

Course – 507C: Advanced Bank Management

Course Objective: To acquaint students about the advanced aspects of banking system

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Branch Operation and Core Banking** (14 hours): Introduction and Evolution of Bank Management – Technological Impact on Banking Operation – Total Branch Computerization – Concept of Opportunities – Centralized Banking – Concept, Opportunities, Challenges and Implementation.
- II. **Delivery Channels** (14 hours): Delivery Channels – Automated Teller Machine (ATM) – Phone Banking – Call Centers – Internet Banking – Mobile Banking – Payment Gateways – Card Technologies and MICR Electronic Clearing.

- III. **Back Office Operations** (12 hours): Bank Back Office Management – Inter Branch Reconciliation – Treasury Management – Forex Operations – Risk Management – Data Center Management – Network Management – Knowledge Management (MIS/DSS/EIS) and Customer Relationship Management (CRM).
- IV. **Inter Bank Payment System** (12 hours): Interface with Payment System Network – Structured Financial Messaging System – Electronic Fund Transfer – RTGSS – Negotiated Dealing Systems and Securities Settlement Systems – Electronic Money and E- Cheques.
- V. **Contemporary Issues in Banking Techniques** (12 hours): Analysis of Rangarajan Committee Reports – E Banking Budgeting and Banking Software.

Skill Development Activities:

- (1) Filling of application for opening a Bank Account
- (2) Preparations of Bank Reconciliation Statement
- (3) Identify and compare the banking delivery channels of nationalized banks and private banks
- (4) List out the boons and the banes of computerization of banks operations
- (5) Current issues in banking technology to be discussed in class

Recommended Books for Reference:

- (1) Kaptan S S and Choubey N S, E-Indian Banking in Electronic Era, Sarup & Sons, New Delhi
- (2) Vasudeva, E-Banking, Common Wealth Publishers, New Delhi
- (3) Chandramohan: Fundamental of Computer Network I.K. International Publishers
- (4) Effraim Turban, Rainer R. Kelly, Richard E. Potter, Information Technology, John Wiley & Sons Inc
- (5) Andrew S. Tanenbaum, Computer Networks, Tata McGraw Hill,
- (6) Padwal & Godse : Transformation of Indian Banks with Information Technology

Specialization Stream – C: Banking and Insurance Stream

B.Com, Semester – VI

Course – 607C: Life and General Insurance

Course Objective: To acquaint students about the principles of managing and administration of insurance business

Pedagogy: Combination of lectures, assignments and group discussions.

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Life Insurance** (14 hours): Introduction to Life Insurance - Principles of Life Insurance - Life Insurance Products, Pensions and Annuities - Life Insurance Underwriting - Need for Selection - Factors affecting Rate of Mortality - Sources of Data - Concept of Extra Mortality - Numerical Methods of Undertaking and Occupational Hazards.
- II. **Legal Aspects of Life Insurance** (14 hours): Legal Aspects of Insurance - Indian Contract Act, Special Features of Insurance Contract; Insurance Laws, Insurance Act, LIC Act, and IRDA Act.
- III. **Claim Management and Re-Insurance** (12 hours): Claim Management - Claim Settlement - Legal Framework - Third Party Administration, Insurance Ombudsman - Consumer Protection Act - Re-Insurance in Life Insurance - Retention Limits - Methods of Re-Insurance.
- IV. **Introduction to General Insurance** (12 hours): Introduction to General Insurance;

Principles of General Insurance, Types of General Insurance - Personal General Insurance Products (Fire, Personal Liability, Motors, Miscellaneous Insurance); Terminology, Clauses and Covers, Risk Assessment, Underwriting and Ratemaking, Product Design, Development and Evaluation and Loss of Provincial Control.

- V. **Insurance Industry** (12 hours): Insurance Industry - Brief History - Pre Nationalization and Post Nationalization - Current Scenario, and Re-Insurance – Functions.

Skill Development Activities:

- (1) Calculation of policy premium with imaginary figures
- (2) Calculation of fair claims with imaginary figures
- (3) Preparation of list occupational hazards under life insurance
- (4) List out top 10 private life insurance companies
- (5) Write a note on the current developments under IRDA Act

Recommended Books for Reference:

- (1) Annie Stephen L, HPH
- (2) P. Perya Swamy, Principles and Practice of Life Insurance
- (3) Raman B, Your Life Insurance, Hand Book
- (4) William C. Arthur, Risk Management and Insurance
- (5) G. Krishna Swamy, A Text book on Principles and Practices of Life Insurance
- (6) Gopal Krishnan, Liability Insurance
- (7) Aramvalarthan, Risk Management I.K. Intl
- (8) Mishra M.N, Insurance Principles and Practice
- (9) Bose A.K, Engineering Insurance
- (10) Fire Insurance Claim, Insurance institute of India
- (11) P. K Gupta, Insurance and Risk Management

Specialization Stream – D: E-commerce Stream

B.Com, Semester – V

Course – 507D: E-Commerce – I

Course Objective: To acquaint students about programming language ‘C’

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **E-Commerce** (8 hours): E-Commerce Vs E-Business, Advantages of E-Commerce, Internet Banking - Advantages of Online Banking, Facilities, Internet Banking in India, ATM, Credit Card/Debit Card, Smart Card; Advantages of Internet Marketing, and Advertising over Internet.
- II. **Introduction to HTML** (10 hours): HTML Documentation, Structure and Tags, Defining Web Page Appearance, Text Formatting, Writing simple HTML Documents, Front Page, Advantages and Options.
- III. **Introduction To ‘C’** (3 hours): History of ‘C’, Features and Merits of ‘C’, Basic Structure of a ‘C’ Program, Character Set, Key Words, Identifiers, Data Types, Constants and Variables, Data Type Declaration Statement, Assigning Values to a Variable, Operators, Expressions, Loading, Editing, Saving and Executing C Programs, and Turbo ‘C’ Hot Keys
- IV. **Input/Output Statements** (15 hours): Input/Output Statements - Unformatted (Getchar; Puchar; Gets; Puts; Getch; Gerche) and Formatted I/O Functions (Scanf; Printf); Program Flow Control Statements, Branching Statements, Looping Statements,

Jumping Statements, If Statement, If-else Statement, Switch Statement, While Statement, Do-While Statement, For Statement, and Nested for Loop Statement.

- V. **Arrays** (8 hours): One Dimensional Array, Two Dimensional Array, and Library Functions (Abs, Sqrt, Pow).
- VI. **Writing Simple Programmes Using ‘C’** (20 hours): Language involving Arithmetical Operations on Numbers, Number Generations of Various Types - Natural Numbers, Even and Odd Numbers, Multiplication Table, Fibonacci Series, Factorial of A Number, Array Addition, Inverse of Matrix, Use of Formulas - Simple Interest, Compound Interest, Area Calculations, etc.

Skill Development Activities:

- (1) Write a C Program to find the area and circumference of the circle
- (2) Write a C Program to show the use of Char and String used
- (3) Write a C Program to the use of Do and While statement
- (4) Write a C Program to show the use of mul and pow functions
- (5) Write a Program to display the growth of a fixed deposit in a bank
- (5) Write a C Program for finding Biggest and Smallest among many numbers using array
- (5) Write a C Program to show the use of Switch Case
- (5) Write a C Program for calculation of salesman's commission
- (5) Write a C Program for preparation of marks statement
- (5) Write a C Program to show arithmetical operations on numbers
- (5) Write a C Program to calculate simple interest and compound interest
- (5) Write a C program to find whether the number is a perfect square or not
- (5) Write a HTML document for display of an Advertisement message with suitable tags
- (5) Write a HTML document to show a moving message on the screen

Recommended Books for Reference:

- (1) Rajaraman, Computer Programming in ‘C’ (Prentice Hall of India).
- (2) Yashwanth, P. Kanetkar, Let Us C (BPB Publications).
- (3) Byron S Gottrifried, Programming with C (Tata McGraw Hill Publishing Co. Ltd)

Specialization Stream – D: E-commerce Stream

B.Com, Semester – VI

Course – 607D: E-Commerce – II

Course Objective: To acquaint students with knowledge about internet and visual basics

Pedagogy: Combination of lectures, assignments and group discussions.

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Introduction to Internet** (6 hours): Meanings of Internet and Intranet, Modem, LAN, WAN, MAN, WWW; Advantages and Disadvantages of Internet.
- II. **Email** (6 hours): Meaning, Advantages, Steps in Creating E-Mail ID, Internet Browsing, Information through Web-Sites, Search Engines, and Browser (Internet Explorer).
- III. **Power Point** (16 hours): Start, End, Open, Format, Edit, Print and Save a Presentation; Insert, Format and Modify Text, Select a Design Template, Create a Title Slide, Create a Multi-Level Bulleted List Slide, Display and Print in Black and White, Describe Speech Recognition Capabilities of Power Point, Add Slides to and Delete Slides from a Presentation; Create a Presentation from an Outline and Use Outline Features, Change the Slide Layout, Insert and Edit Clip Art, Add a Header and Footer, Add

- Animation and Slide Transition Effect, Create Presentation using Embedded Visuals, Create a Slide Background using a Picture, Customize Graphical Bullets, Create and Embed an Organizational Chart, Insert and Format a Table into a Slide, Add an Animation Scheme to selected Slides, Print Handouts, and Rearrange Slides.
- IV. **Introduction to Visual Basic Programming** (12 hours): Introduction to Visual Basic, Terminologies, Creating an Application, Modular Environment; Building an Application, Setting Properties of Objects, Forms; Introduction to Controls; Event-Driven Programming.
- V. **B Coding: Examining Code** (12 hours): Using Object Browser, Statements and Functions, Conditional Statements and Looping Statements in Visual Basic; Native Code Compiler; Debugging, Overview of Debugging, Forms, Using Forms, Multiple Forms, Events; Start Up and End of Application Variables, Data Types, Scope and Life Time of Variables, Constants, Arrays and User-Defined Types.
- VI. **Procedure** (12 hours): Introduction to Procedure, Arguments and Parameters; Named Arguments and Optional Arguments; Controls – Using Controls, and Standard Controls (Custom Controls).

Skill Development Activities:

- (1) Write the steps for addition of any two numbers in Visual Basic
- (2) Write the steps for Swapping two numbers in Visual Basic
- (3) Write the steps for finding Simple Interest/Compound Interest in Visual Basic
- (4) Write the steps for creating Presentation having atleast five slides related to a new product launching
- (5) Write the steps for creating Presentation having atleast four or five slides related to motivating the salesmen

Recommended Books for Reference:

- (1) U. S. Pandey, Rahul Srivastava and Others, E-Commerce and Its Applications (S. Chand & Co)
- (2) Kamlesh N. Agarwal and Deeksha Agarwal, Business on the Net (McMillan India Ltd)
- (3) Jerke, Visual Basic
- (4) White, Visual Basic Programming

Specialization Stream – E: Quantitative Techniques Stream

B.Com, Semester – V

Course – 507E: Quantitative Techniques – I

Course Objective: To acquaint students about the application of mathematical and statistical techniques to practical business problems

Pedagogy: Combination of lectures, assignments and group discussions.

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Arithmetic and Geometric Progression** (8 hours): Arithmetic Progression, Geometric Progression, Some of n^{th} Term of Arithmetic Progression and Geometric Progression, Arithmetic Mean and Geometric Mean.
- II. **Matrices and Determinants** (13 hours): Matrices, Types of Matrices; Operation of Addition, Subtraction and Multiplication of Matrix with Special Application to Business; Transpose of Matrix, Determinants of Square Matrix, Cramer's Rule with Two and Three Unknown Properties, Adjoint of a Square Matrix, and Inverse of a Square Matrix (excluding Matrix Method).
- III. **Differential Calculus** (13 hours): Variables and Constant, Function, Real/Valued

Function, Limits of Function, Methods of Evaluating Limits, Differentiation of Linear Function, Finding Maxima and Minima of a Function, Application of Differential to Commerce, (excluding Derivations).

- IV. **Linear Programming** (14 hours): Linear Inequalities, Linear Programming, Formation of Linear Programming Problems, Mode/Solutions to Linear Programming Problems by Graphic and Simplex Method (problems to be restricted to two variables).
- V. **Theory of Probability** (10 hours): Introduction, Random Experiments, Sample Space and Probability, Theory of Expectations, Random Variables, Problems related to Probability based on Combination, Law of Probability, Events, and Compound Events.
- VI **Theoretical Distribution** (6 hours): Introduction, Binomial Distribution, Poisson Distribution, Normal Distribution, and Problems

Skill Development Activities:

- (1) Apply Arithmetic Progression and Geometric Progression methods to find the growth rate of food grains and population
- (2) Use Matrix Principles to implement food requirement and protein for two families. Show the way in which price and demand situations will help to purchase goods and services by the use of matrices
- (3) Select different ways to go to Bengaluru from your native place through permutation techniques
- (4) Use different techniques to show price, supply and demand position for a particular product, and also show maximum and minima
- (5) Visit a nearest Industry or Computer Centre and draw Linear Programming Problem model regarding different problems. Find a solution to the problem

Recommended Books for Reference:

- (1) Business Mathematics, Sanchethi Kapoor
- (2) Business Mathematics, S. P. Gupta
- (3) Mathematics for Cost Accountants, R. Gupta
- (4) Business Mathematics: Madappa and Sridhara Rao
- (5) Business Mathematics: Dorairaj, S. N
- (6) Business Mathematics: B. H. Suresh
- (7) Business Mathematics: Sanchethi Aggarwal
- (8) Business Mathematics: Aggarwal
- (9) Business Mathematics: Oak and other (Himalaya Publishing House)

Specialization Stream – E: Quantitative Techniques Stream

B.Com, Semester – VI

Course – 607E: Quantitative Techniques – II

Course Objective: To acquaint students with the application of mathematical techniques to business situations

Pedagogy: Combination of lectures, assignments and group discussions

Weekly Teaching Hours: 4 Maximum Marks: 100 Examination Duration: 3 hours

Unit

Course Inputs

- I. **Games and Strategies** (10 hours): Introduction to Games, Two-Person Zero-Sum Games, Some Basic Terms, the Maxi-min– Mini-max Principle, Games without Saddle Points - Mixed.
- II. **Assignment Problems** (10 hours): Introduction, Mathematical Function of the Problems, Assignment Cases in Assignment Problems, Typical Assignment Problem, and Travelling Salesman Problem.

- III. **Transportation Problems** (12 hours): Introduction, General Transportation Problem, Transportation Table, Duality in Transportation Problem, Loops in Transportation Problem, LP Formulation of the Transportation Problem, Solution of a Transportation Problem, Finding an Initial Basic Feasible Solution, and Test for Optimality
- IV. **Decision Analysis** (10 hours): Introduction, Decision Making Problem, Decision Making Process, Decision Making Environment, Decision under Uncertainty, Decisions under Risk, and Decision Tree Analysis.
- V. **Simulation** (12 hours): Introduction, Why Simulation, Methodology of Simulation, Simulation Models, Event-Type Simulation; Generation of Random Numbers; Monte-Carlo Simulation, Simulation of Inventory Problems, Simulation of Queuing System, Simulation of Maintenance Problems, Simulation of Investment and Budgeting, Simulation of Job Sequencing, Advantages and Limitations of Simulation.
- VI. **Project Management** (10 hours): Introduction, Basic Concepts of Network Analysis, Time Estimates in Vertical Path Analysis, PERT and CPM, Simple Problems on PERT and CPM.

Skill Development Activities:

- (1) Play game for competing with the rival trader, find Games Strategies to withstand in the game
- (2) Give an assignment to a particular person who is capable to find suitable measures to particular assigned task
- (3) Find the least root to go to the places when a travelling agent is supposed to visit more than two places simultaneously
- (4) Find strategies for assigning a particular task to various persons
- (5) How simulation can be derived and give suitable examples
- (6) Experiment different events for finding solution for probable events

Recommended Books for Reference:

- (1) Business Mathematics, Sanchethi Kapoor
- (2) Business Mathematics, S. P. Gupta
- (3) Mathematics for Cost Accountants, R. Gupta
- (4) Business Mathematics: Madappa Sridhara Rao
- (5) Business Mathematics: Dorairaj, S. N
- (6) Business Mathematics: B. H. Suresh
- (7) Business Mathematics: Sanchethi Aggarwal
- (8) Business Mathematics: Aggarwal
- (9) Business Mathematics: Oak and other (Himalaya Publishing House)
- (10) Kanti Swarup, P. K Gupta Man Mohan, Operations Research
- (11) V. K. Kapoor, Quantitative Techniques

Question Paper Pattern for Semester-end Examinations

[Each Question Paper shall be divided into three Sections *viz.*, Section – A (Conceptual), Section – B (Analytical) and Section – C (Application)]

Section – A:

Maximum Marks: 15,

Three Questions shall be answered out five Questions (including three Problems in the case of Quantitative Courses),

Each question carries five marks, and

Answer to each theory question shall be in not more than two pages.

Section – B:

Maximum Marks: 20,

Two Questions shall be answered out four Questions (including three Problems in the case of Quantitative Courses),

Each Question carries ten marks, and

Answer to each theory Question shall be in not more than five pages.

Section – C:

Maximum Marks: 45,

Three Questions shall be answered out five Questions (including four Problems in the case of Quantitative Courses),

Each Question carries 15 marks, and

Answer to each theory Question shall be in not more than eight pages.

Note: Calculators, Mathematical Tables and Present Value Tables are allowed.

**Question Paper Pattern for Course – 508: Logical and Analytical Reasoning
(B.Com, Semester – V)**

Duration: 90 minutes,

Maximum Marks: 40,

40 multiple answer questions and all are compulsory, and

Each question carries 1 mark.

**Question Paper Pattern for Course – 608: Soft Skills
(B.Com, Semester – VI)**

Duration: 90 minutes,

Maximum Marks: 40,

Students shall answer 8 questions out of 10 questions, and

Each question carries 5 marks.

**Question Paper Pattern
for**

**Course – 307: Environmental Science (B.Com, Semester - III) and
Course – 407: Indian Constitution (B.Com, Semester - IV)**

Duration: 3 hours,

Maximum Marks: 80,

80 multiple answer questions and all are compulsory, and
Each question carries 1 mark.

KUVEMPU



UNIVERSITY

Revised syllabus

BCA, B. Sc (Computer Science) and BA (Computer Applications)

W.E.F 2019-20

**DEPARTMENT OF P.G. STUDIES AND RESEARCH IN
COMPUTER SCIENCE,**

JANNASHAYADRI , SHAKARGHATTA

SHIMOGA, KARNATAKA

NEW SYLLABUS FOR B.Sc. (Computer Science)**(EFFECT FROM 2019-20)**

Paper code	Semester	SUBJECT	Weekly hours	Internal marks	External marks	Practicals	Total
BSC1	I	CF &CP	4+3	10	50	40	100
BSC1	I	CF &CP	4+3	10	50	40	100
BSC2	II	DS	4+3	10	50	40	100
BSC3	III	DBMS	4+3	10	50	40	100
BSC4	IV	C++	4+3	10	50	40	100
		JAVA	4+3	10	50	40	100
BSC5	V	UNIX Programming	4+3	10	50	40	100
		Advanced JAVA	4+3	10	50	40	100
BSC6	VI	SE&CN	4+3	10	50	40	100

FIRST SEMESTER B.Sc (Computer science)

Computer Science -I

BSC-1 Computers Fundamentals and C Programming

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to Computer Systems:

10 hrs

Definition of a Computer, History of Computers, Generations of Computers, types of computer – based on size and working principle, Block diagram of a Computer with functional units(explanation), Parts of a computer system, Information processing Cycle. Definition of software and hardware, types of programming languages, assembler, compiler, interpreter, linker, loader (Definitions only),number system – decimal, binary, octal and hexadecimal number, inter-conversion of decimal to binary and vice-versa. ASCII codes.Algorithm-definition, Characteristics, notations. Flowchart-definition, Symbols used in writing the flow-chart Writing an algorithm and flow-chart of simple problems.

Unit 2- Introduction to Computer Systems:

10 hrs

Introduction to C, features ofC , basic C program structure, character set, tokens, keywords and identifiers. Constants, variables, data types, variable declaration, symbolic constant definition.

Unit 3- Operators and Expressions:

08 hrs

C operators- arithmetic, relational, logical, bitwise, assignment, increment and decrement, conditional (?:) and special operators, Arithmetic expressions, precedence of operators and associativity. Type conversions, mathematical functions.Definition of macro and pre-processor directives, Managing I/O operation – reading and writing a character, formatted and unformatted/O functions.

Unit 4- Control Structures:

10 hrs

Conditional control statements- if, if-else,nested-if,switch , go to statement, while, do-while and for statements. Unconditional control statements- break, continue and return statements(definition and explanation with syntax, flowchart and examples)

Unit 5- Arrays, Strings and Functions:

10 hrs

Definitions of an array, types-one and two dimensional array,(definition, declaration, initialization with examples).Strings–definition, declaration and initialization of string variable, string handling functions- strcmp, strcpy, strlen, strlwr,strupr(explanation with syntax and examples) Functions – definition, need, syntax for function declaration, function prototype, category of functions, nesting offunctions, function with arrays, scope of variables ,parameter passing mechanism-call by value and call by reference. Recursion and Recursive function(definitions only)

Reference :

1. Fundamentals of Computers, V. Rajaraman.
2. Computer Concepts and C Programming, P.B. Kotur
3. Let us C ,YashwanthKanetkar
4. ANSI C, Balagurusamy

QUESTION PAPER PATTERN FOR I SEMESTER B.Sc(Computer science)**PART -I:** 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: C- PROGRAMMING LAB

1. Find the biggest of three numbers.
2. Arithmetic operations using switch statement.
3. Find the Fibonacci series between M and N.
4. Prime numbers between M and N
5. Binary to Decimal conversion
6. Sorting an unsorted array
7. Searching an element in an array.
8. Addition of two matrices
9. Multiplication of two matrices
10. Norm and trace of the matrix.
11. Count the numbers of vowels in a given string.
12. Find the factorial of a number using function.

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

SECOND SEMESTER B.Sc (Computer science)

Computer Science -II

BSC-2 DATA STRUCTURES USING C

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to Data Structure:

10 hrs

Definition of Structure, syntax and example for structure declaration. Definition of union, syntax and example for union declaration, difference between structure and union. Pointers–Definition, Declaration, Examples. Dynamic memory allocation functions – syntax and examples. Definition of Data Structure and types of data structures with examples.

Unit 2 – Stack and recursion:

10 hrs

Definition and example of stack (LIFO), operations of stack with algorithms, applications of stack, algorithm for the conversion of infix to postfix expression. evaluation of postfix expression , Tower of Hanoi problem and factorial of a number using recursion.

Unit 3- Queue:

10 hrs

Definition and example of Queue (FIFO), operations on queue, types of queue – ordinary queue and circular queue (definitions only), disadvantages of ordinary queue. Linked list–Definitions and types of lists (definitions only), operations of Single Linked List, implementation of stack using linked list, implementation of queue using linked list,

Unit 4- Tree :

10 hrs

Definition of a Tree, Definition of root, left sub tree, right sub tree, degree of node, terminal node, depth, Definition of Binary tree, types of binary trees (definition only), Algorithm for tree traversal.

Unit 5- Sorting and searching:

08 hrs

Definition of sorting, explanation of bubble sort, shell sort, radix sort and merge sort with examples. Definition of searching, explanation of Binary search and linear search with examples and algorithms.

References:

1. Systematic approach to data structure - Padmareddy
2. Programming in ANSI C - E Balaguruswamy
3. Datastructures and applications - Trembly and Sorenson

QUESTION PAPER PATTERN FOR II SEMESTER B.Sc(Computer science)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: DATA STRUCTURES LAB

1. Implementation of stack
2. Evaluation of postfix expression
3. Conversion of infix to postfix
4. Tower of Hanoi
5. Implementation of queue
6. Implementation of stack using linked list
7. Implementation of queue using linked list
8. Quick sort
9. Shell sort
10. Binary search

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

THIRD SEMESTER BSc (Computer science)

Computer Science -III

BSC-3OBJECT ORIENTED PROGRAMMING WITH C++

Theory Examination- 50 Max marks. Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to OOPS: 10 hrs

Object Oriented Programming paradigm, Basic concepts of Object Oriented Programming-Classes, Objects, Data Abstraction and Encapsulation, Polymorphism, Inheritance, Dynamic Binding, Message passing, Benefits of OOP, applications of OOP.

Unit 2-Introduction to C++: 10 hrs

Difference between C and C++, Structure of a C++ program, input and output statements, tokens - Keywords, identifiers, constants, strings and operators, reference variables – definition and example, special operators in C++, brief introduction to control structures in C++.

Unit 3-Classes Objects and Member Functions: 10 hrs

Difference between structure and class, syntax and example for class declaration, Definition of data member and member function, Defining member function inside and outside the class, inline functions, array of objects, default arguments, static data members and static member functions, function overloading, definition of friend function, syntax and example for the declaration of friend function, special characteristics of friend function.

Unit 4- Constructors, destructors and Operator overloading: 09 hrs

Definition of a constructor, types - parameterized constructor, default constructor, copy constructor, special characteristics of constructor, definition of a destructor, special characteristics of destructor, definition to Operator overloading, overloading binary operator (+) to add two complex numbers, rules for operator overloading.

Unit 5: Inheritance and templates: 09 hrs

Definition of Inheritance, forms of inheritance, syntax and example for defining derived classes, visibility modes, explanation of multilevel inheritance and hybrid inheritance with examples. Definition of templates, syntax and example for class and function template.

Reference Books:

1. Object Oriented Programming with C++ - E Balaguruswamy
2. C++ - The Complete Language – BjarneSchildt
3. Object Oriented Programming in Turbo C++ - Robert Lafore

QUESTION PAPER PATTERN FOR III SEMESTER B.Sc (Computer science)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: C++ LAB

1. Write a c++ program to find the result of a student using class concept
2. Define a class to represent product details it includes data member pname, pcode, price, pquality include member function a) to get product detail b) to display the product details and total price using class concept
3. Write a c++ program to print Fibonacci series using constructor
4. Write a c++ program to find biggest of two numbers and three numbers using function overloading
5. write a c++ program to calculate area of triangle, rectangle and circle using function overloading
6. write a c++ program to calculate family income using friend function
7. write a c++ program to add two complex numbers using operator overloading
8. write a c++ program to implement multiple inheritance by creating classes: father , mother and son
9. write a c++ program to swap two numbers using function template
10. write a c++ program to sort an array using function template

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

FOURTH SEMESTER B.Sc (Computer science)
Computer Science -IV

BSC-4 DATABASE MANAGEMENT SYSTEM

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to DBMS:

10 hrs

Meaning of data and information, definitions of database, applications of database system, definition of DBMS, disadvantages of file processing system (advantages of DBMS), three levels of data abstraction, difference between schema and instance, definition of data models, types of data models (brief explanation), database languages – DDL and DML.

Unit 2- E-R model:

10 hrs

Different types of database users, functions of Database Administrator (DBA), basic-concepts - Primary keys, foreign key, super key, definition of E-R diagram, symbols used in E-R Diagram, E-R diagram for Banking enterprise, E-R diagram for Book store, types of entities, entity sets, attributes, types of attributes, weak entity sets, cardinality ratios (mapping cardinality).

Unit 3- Relational Model:

10 hrs

Fundamental operations of Relational algebra - select, project, union, set difference, join, division operations (explanation with examples). Types of aggregate functions – MAX, MIN, SUM, COUNT and AVERAGE (Definition with example).

Unit 4- SQL:

09 hrs

Definition of Query, explanation of basic structure of SQL – Select, from and where clauses in SQL, data types in SQL, explanation of set operation in SQL – Union, intersection, except, NULL values.

Unit 5: Relational database design:

09 hrs

Pitfalls in relational database design, definition of Normalization, Various types of Normal forms (Definitions only) – First Normal form, Second Normal form, Third Normal form, Boyce-Codd Normal Form (BCNF).

Reference Books:

1. Korth, Sudarshan “Database System concepts”, Mcgraw Hill-IV Edition.
2. Navathe, Silberchatz and Elmasri “fundamentals of database Systems”-Addison Wesley
- 3.C.J. Date “Introduction to Database systems” Addison-wesley.
4. Bipin C Desai “Introduction to Data base system” Galgotia publications

QUESTION PAPER PATTERN FOR IV SEMESTER B.Sc (Computer science)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: SQL LAB

I. Use default emp and dept tables to write SQL statements for following queries

1. Find the employee details in ascending order of their name and descending order of their salary
2. Find names of all employees whose name starts with 's' and having atleast 6 characters in it
3. Find the name of all managers and number of employees under them
4. Find the details of all employees in the research department
5. Find the minimum, maximum and average salary of each department
6. Find department name having least number of employees
7. Find the department name having highest annual payroll
8. Add an employee under the manager smith
9. Find the employees who are not getting commission

II. Create tables as below

Student(name string, regno string primary key, dob date, doj date ,course string foreign key)

Markscard(regno foreign key, sem string, sub1 number, sub2 number, sub3 number, tot number, avge number, result string)

Write SQL statements for the following queries.

1. List the names of students studying in BCA course in the order of their joining
2. Find the name of student who has scored highest marks in every sem of each course
3. Count the number of students in each course
4. Find the course having second highest number of students
5. Find the course having least students in I semester
6. Raise marks of sub3 in III sem BCA students by 5% if the student has failed in that subject
7. Display the details of student 'xxx' in every semester.
8. Find the names of all juniors of 'yyy' in course 'c1'
9. Find all students studying with 'xxx' and elder to him (compare DOB)

III. Dept(deptno integer pkey, dname string not null, loc string not null)
Emp(eno integer pkey, ename string, deptnofkey, desgn string not null, bsal number>0)
Salary(enofkey,da,hra,gross,it,pf,net,comm)
Designations are: manager,clerk,salesman
Comm=5% of basic if desgn=salesman otherwise null
Da=15% bsalhra = 7% of bsal gross=bsal+da+hra
It =0 if gross<15000
= 10% of gross if gross between 15000 and 30000
=20% of gross if gross between 30000 and 50000
= 30% of gross otherwise
pf = 10% of gross or 1000 whichever is less

Write SQL statements for

1. Count the number of employees in every designation
2. List the employees of every department in descending order of their net salary
3. List the name and salary of highest salary payer in every department
4. List the name of employee paying highest IT
5. List the total IT paid by each department
6. List the departments in every location
7. Raise the basic salary by 10% for the managers of every department.
8. Find number of employees having at least 10 years of experience in every department.
9. Count the number of employees who are not getting commission in every department

PRACTICAL EXAM SCHEME

Practical Proper - 30 Marks

Table creation & data insertion =10 marks

SQL queries- 4 X 5 marks =20 marks[Queries writing 3 marks (each) and Execution 2 marks (each)]

Viva – voce - 05 Marks

Record - 05 Marks

FIFTH SEMESTER BSc (Computer science)
Computer Science -V

BSC-5.1 JAVA PROGRAMMING

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to Java:

12 hrs

History of Java, Java features, Difference between C/C++ and Java, Java program structure, Java tokens, Statements, JVM, Java and Internet, Java and WWW, Web browsers, Java support system, Java Development Kit (JDK), Application Programming Interface(API), Java Runtime Environment (JRE). Introduction to packages in Java, Applets, Operators & Expressions, Data types, Constants and Variables, Type conversions, Mathematical functions; Control Statements: Decision making and Branching with while, do-while, for and labeled loops; Arrays, Vectors & Strings: Initialization, Declaration

Unit 2-Overview:

10 hrs

Class, Objects, Constructor, Method overloading, Static members; Inheritance: Single, Multilevel, Hierarchical, Visibility modes, Method overriding, Final variable, Abstract methods and classes; Interface: Defining, Extending and implementing assigning interface variables

Unit 3-Packages and multithreading:

10 hrs

Java API Packages, using system packages, naming convention, accessing and using a package, adding a class to packages, hiding classes. Multithreaded programming: Creating a thread, extending the thread class, stopping and blocking a thread, life cycle of a thread, using thread methods, thread exceptions, thread priority, synchronization, implementing the runnable interface.

Unit 4-Exceptions and Debugging:

08 hrs

Meaning of errors and exceptions, Dealing with errors, Classifications of exceptions, syntax of handling exceptions, advertising the exceptions, throwing and re-throwing exceptions, creating Exception classes, multiple catch statements, finally clause, Debugging techniques – tricks for debugging, Assertions, Java Debugger (JDB).

Unit 5-Applets and Graphics:

08 hrs

Applets basics, applets and application, Life cycle, Life cycle of Applet programming- passing parameter to applets, paint and repaint methods, Graphics class, Line, Rectangle, Circle, Ellipse, Arcs and Polygon, drawing bar charts.

Reference Books:

1. Programming with Java- A primer, 4th Edition, by E Balaguruswamy.
2. The Complete Reference – Patrick Naughton and Schildt
3. Programming in Java – Joseph L Weber

QUESTION PAPER PATTERN FOR V SEMESTER B.Sc (Computer science)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: JAVA PROGRAMMING LAB

1. Write a Java program to generate first n odd numbers and pick and display prime numbers among them. Read value for n as command line argument.
2. Write a Java program to create a vector, add elements at the end, at specified location onto the vector and display the elements. Write an option driven program using switch...case.
3. Write a java program to find area of geometric figures using method overloading.
4. Write a Java program to find the circumference and area of the circle using interface.
5. Write a java program to sort the alphabets in the given string.
6. Write a java program to accept student information using array of objects and constructor initialisation.
7. Write a java program to implement constructor overloading by passing different number of parameter of different types.
8. Write a program to implement an applet by passing parameter to HTML
9. Write an applet program to display human face
10. Create an applet to display concentric n circles, input value for n.

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

FIFTH SEMESTER BSc (Computer science)

Computer Science -VI

BSC-5.2 UNIX PROGRAMMING

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1.Introduction to Operating system:

10hrs

Definition of OS, functions of operating systems. Early systems – Simple monitors, Batch Systems, Multiprogramming, Time Sharing, Real time, Parallel and Distributed systems Scheduling concepts, Scheduling algorithms: FCFS, Shortest job first, priority scheduling, round robin, Definition of deadlock problem, deadlock characteristics, deadlock prevention and avoidance. File concept –allocation and access methods, directory structures, Contiguous allocation.

Unit 2- Introduction to Unix :

08 hrs

The Unix operating system, , A brief Session, The Unix Architecture, Features of UNIX, POSIX and Single UNIX specification, Locating commands, Internal and External commands, Command Structure, Flexibility of command Usage, Man Browsing the Manual Pages ON-line, Understanding the man Documentation. General-Purpose Utilities: Cal command, date command, echo, printf, bc, script, passwd, who, uname

Unit 3- The File System in Unix:

10 hrs

The file, The Parent –Child Relationship, The HOME Variable, pwd, cd, mkdir, rmdir, Absolute Pathname, Relative Pathname, ls, The Unix File system. Handling Ordinary Files: Cat, cp, rm, mv, more, Thelp subsystem: Printing a File, File, wc, od, cmp, comm, diff, dos2unix and unix2dos, compressing and archiving files, gzip, and gunzip, tar, zip and unzip. Basic File Attributes: Listing file attributes, listing directory attributes, File Ownership, File Permissions, changing file permissions, Directory Permissions, Changing File Ownership

Unit 4-The Vi Editor

10 hrs

Vi basics, Input Mode, Saving Text and Quitting, Navigation, Editing Text, Undoing Last Editing Instructions(U and U), Repeating the last command(.), Searching for a Pattern(/ and ?), Substitution

Unit 5-The Shell

08 hrs

The shell's Interpretive Cycle, Shell Offering, Pattern Matching, Escaping and Quoting, Redirection, /dev/null and /dev/tty, Pipes, tee, Command Substitution, Shell variables. Essential shell programming: Shell scripts, read, using command line arguments, exit and exit status of command, the logical operators && and ||- conditional execution, the if conditional, using test and to evaluate expressions, the case conditional, expr, \$0: calling a script by different names, while, for, set and shift, the here document (<<), trap, debugging shell scripts with set -x, sample validation and data entry scripts.

Reference Books:

1. Sumitabha Das, UNIX System V.4, Concepts and Applications, TMH.
2. Operating systems concepts, Korth

QUESTION PAPER PATTERN FOR V SEMESTER B.Sc(Computer science)**PART -I:** 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: UNIX PROGRAMMING LAB

1. Write a shell script program to perform all arithmetic operation on floating point.
2. Write a shell script program to check whether the given number is positive or negative.
3. Write a shell script program to reverse a number.
4. Write a shell script program to find sum of digit of a number.
5. Write a shell script program to find the sum of the series (sum= $1 + \frac{1}{2} + \dots + \frac{1}{n}$)
6. Write a shell script program to add, subtract and multiply the two given number passed as command line argument.
7. Write a shell script to count number of characters in a given string
8. Write a shell script program to read pattern and file name and search whether the given pattern in a file or not.
9. Write a shell script to read filename from command line argument check whether the file is regular file or directory or by both.
10. Find the number of directory file and ordinary files in the current

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

SIXTH SEMESTER BSc

Computer Science -VII

BSC-6.1 ADVANCED JAVA PROGRAMMING

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1-Review of Java Concepts and AWT, Graphics Programming: 10 hrs

Review of Java Concepts .AWT and AWT Classes, Window fundamentals – Component, Container, Panel, Window, Frame, Canvas.Working with frame window. GraphicsProgramming: Graphics class, methods, drawing objects, line graphs, polygon classes,working with colours and fonts. Advanced graphics operations using Java2D.Designing, simple User Interfaces (UIs) using AWT, Layout Manages.

Unit 2- Swings and event handling: 10 hrs

Event Handling: Basics of Event Handling, the delegation event model, AWT event hierarchy and event classes, Event Listener Interfaces, Adapter Classes, Event queue. Swing: Meaning, need, difference between AWT and swing. The Model-View-Controller (MVC) designpatterns, Creating simple UIs using swing, and handling basic events.

Unit 3-Java Beans, Java Archives (JAR): 08 hrs

Meaning and need of Java Beans, Advantages, Bean writing process, Bean properties. Java Archives (JARs): Meaning, need, the JAR utility, Creating JAR files.

Unit 4-File Management and JDBC: 10 hrs

File, creating a file, writing to a file, opening a file, reading from a file, file management, checking existence of a file, deleting a file.JDBC: Meaning, need, concept and structure of JDBC, relation with ODBC, JDBC driver types and their meaning, the JDBC process – loading the driver, connecting to the DBMS, creating and executing SQL statement, Connection object, Statement object, Prepared Statement object, Callable Statement, Result Set, JDBC Exceptions.

Unit 5-Basic concepts of Collections, Generics and Network programming: 10 hrs

Collections: Meaning, need, Collection interfaces, Concrete Collections – Array List, Hash set, Map. Generics: Meaning, need, benefits, generics usage, basics of generic types, type parameter naming conventions, type wildcards, using type wildcards, generic methods, bound types, writing simple generic container, implementing the container, implementing constructors, implementing generic methods.

References:

- 1.Complete Reference – Java 2:Herbert Schildt, 5th / 7th Edition, Tata McGraw-Hill
- 2.Thinking in Java: Bruce Eckel
3. Core Java 2: Volume I – Fundamentals: Cay S. Horstmann, Gary Cornell, Pearson Education Asia.
- 4.Core Java 2: Volume II – Advanced Features: Cay S. Horstmann, Gary Cornell

QUESTION PAPER PATTERN FOR B.Sc(Computer science)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: ADVANCED JAVA PROGRAMMING LAB

1. Write an applet to add, remove, select an item in a list
2. Write an applet to display selected geometric figure from a list.
3. Write a program to implement mouse events
4. Write a program to implement keyboard events
5. Write a Java program (console) to store the typed text to a file.
6. Write a Java program to display the content of a file.
7. Write a Java program with JDBC to store the details of a person on to an Oracle database table.
8. Write a Java program with JDBC to access and display the details of a person stored in an Oracle database table.
9. Write a Java program with JDBC to access and delete the details of a given person stored in an Oracle database table.
10. Write a Java program to demonstrate the use of generics.

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

SIXTH SEMESTER BSc

Computer Science -VIII

BSC-6.2 SOFTWARE ENGINEERING AND COMPUTER NETWORKS

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to Software Engineering: 10 hrs

IEEE definition of Software and Software Engineering, Software Problems, Software engineering challenges, Software quality attributes, phases in software development (Phased Development process), Definition of Software process, Components of software process, desired characteristics of software process, Software development process models- waterfall model, prototype model and spiral model .

Unit 2- Software design: 09 hrs

Definition of SRS, need for SRS, Characteristics of SRS, Structure of SRS, design objectives ,design principles, module level concepts – coupling and cohesion.

Unit 3- Coding and testing : 09 hrs

Definition of Coding, Programming principles and guidelines, top down and bottom-up Approaches, definition of testing, testing fundamentals, levels of testing, Difference between black box testing and white box testing.

Unit 4-Introduction to Computer networks Network Hardware: 10 hrs

Definition of computer network, Goals of computer network, Types of Networks based on transmission technology - Broadcast, point- to -point, Types of Networks based on size & scale - LAN, WAN, MAN, Protocol hierarchies (Network software), Network topologies – Bus, Mesh, Ring, tree and star.

Unit 5- Network Software, Reference models and Transmission Media: 10 hrs

Reference models - OSI / ISO model, TCP / IP model, ARPANET,Transmission Media - twisted pair, coaxial cable, fiber optics cable, Internet and its applications, Wireless media - Bluetooth, Wi-Fi, internet and its applications

References:

1. An integrated approach to Software Engineering: PankajJalote.
2. Software Engineering a practitioners approach: Roger Pressman.
3. Computer Networks:5th Edition, Andrew S Tanenbaum.

QUESTION PAPER PATTERN FOR B.Sc(Computer science)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: PROJECT LAB

PROJECT LAB EXAM SCHEME

The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories. The project is of 3 hours/week for one (semester VI) semester duration and a student is expected to do planning, analyzing, designing, coding and implementing the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.

The Project work should be either an individual lone or a group of not more than five members.

The project proposal should include the following:

- Title
- Objectives
- Input and output
- Details of modules and process logic
- Limitations of the project
- Tools/platforms, Languages to be used
- Scope of future application

The examiner will evaluate the project work as follows:

- Project Report - 10 Marks
- Project Demo - 10 Marks
- Viva-Voce - 20 Marks

KUVEMPU



UNIVERSITY

Revised syllabus

BCA, B. Sc (Computer Science) and BA (Computer Applications)

W.E.F 2019-20

**DEPARTMENT OF P.G. STUDIES AND RESEARCH IN
COMPUTER SCIENCE,**

JANNASHAYADRI , SHAKARGHATTA

SHIMOGA, KARNATAKA

Regulations for BCA course

Eligibility for Admission

- 1.** A candidate who passed the three year Diploma in the branch of computer science, examination conducted by the board of Technical education, Government of Karnataka, shall be eligible for admission to first semester of BCA degree course.
- 2.** A candidate who passed the two-year Pre-University examination in science/commerce of Karnataka state or any other examination considered as equivalent are eligible for admission to the first semester of BCA degree course.
- 3.** A candidate who passed the three year Diploma in the branch of computer science, examination conducted by the board of Technical education, Government of Karnataka, shall be eligible for Lateral admission to the Third semester of BCA degree course.
- 4.** Computational Mathematics-I and II Subjects should be taught by Computer Science Faculty

NEW SYLLABUS FOR BCA (EFFECT FROM 2019-20)

Semester	Paper	No of Hours (Theory)	No of Hours (Practical)	IA	External
I	English	4	-	20	80
	Kannada / Hindi/ Sanskrit/ Urdu	4	-	20	80
	Computational Mathematics - 1	4	-	20	80
	Computer Fundamentals	4	-	20	80
	Introduction to Information Technology	4	-	20	80
	Programming Fundamentals & C-Programming	4	-	20	80
	Excel & C Lab	-	3	20	80
TOTAL				140	560
II	English	4	-	20	80
	Kannada/Hindi/ Sanskrit/ Urdu	4	-	20	80
	Computational Mathematics - 2	4	-	20	80
	C & Linear Data Structures	4	-	20	80
	Database Management System – 1	4	-	20	80
	Digital Fundamentals	4	-	20	80
	DS & Advanced Excel Lab	-	3	20	80
TOTAL				140	560
III	English	4	-	20	80
	Kannada / Hindi/ Sanskrit/ Urdu	4	-	20	80
	Non Linear Data Structures using C++	4	-	20	80
	Database Management System – II	4	-	20	80
	System Software	4	-	20	80
	DS Lab Using C++	-	3	20	80
	SQL Using MYSQL	-	3	20	80
TOTAL				140	560
IV	English	4	-	20	80
	Kannada / Hindi/ Sanskrit/ Urdu	4	-	20	80
	Java	4	-	20	80
	PL/ SQL and Data Warehousing	4	-	20	80
	Software Engineering	4	-	20	80
	Java Lab	-	3	20	80
	PL/ SQL & DW Lab	-	3	20	80
TOTAL				140	560
V	Advanced programming in java	4	-	20	80
	Web Programming	4	-	20	80
	Operating System	4	-	20	80
	Data Communication	4	-	20	80
	Computer Networks	4	-	20	80
	Advanced java Lab	-	3	20	80
	Web Programming Lab	-	3	20	80
TOTAL				140	560
VI	Unix Operating System	4	-	20	80
	. Net Programming	4	-	20	80
	Elective - 1 Digital Image Processing / Cloud Computing	4	-	20	80
	Elective – 2 Computer Graphics/Operation Research	4	-	20	80
	Unix & Net Lab	-	3	20	80
	Project Lab	-	3	20	80
	TOTAL				120

BCA - 1.3 : Computational Mathematics - 1

PART- A

Unit-1 Sets, Relations and Functions

12 hrs

Definition of a set, sub-set with examples, Venn diagrams, types of sets-equal sets, null set, disjoint sets, finite set, infinite set, power set, cardinality of set. Operations on sets-union and intersection of two sets, complement of a set, difference of two sets, symmetric difference of sets. Algebraic properties of set operations, strings and regular expressions. Definition of a relation with examples, types of relations-empty, universal, trivial, equivalence, reflexive, symmetric, transitive relation (definition and examples only, no problems). Definition of a function with examples, types of function, one-to-one (injective). Binary operation - commutative, associative, identity and invertible (definition and examples only, no problems). Functions for computer science - characteristic function, floor function and ceiling function.

Unit-2 Logic and Reasoning

12 hrs

Definition of proposition or statement, proposition variables, negation of statements, truth table, conjunction, disjunction, implications quantifiers- predicate, universal quantifier, universal quantification, existential quantification. Conditional statement/implication, contrapositive and converse, equivalence or bi conditional, tautology, contradiction, logical equivalence, properties of proposition operation-commutative, associative, distributive, idempotent negation. Simple problems on tautology and equivalence. Rules for validating statements

PART- B

Unit-3 Mathematical Induction and Counting

12 hrs

Principle of mathematical induction, simple problems on principle of mathematical induction. Fundamental principle of counting (statement with examples only), permutations-definition and simple problems. Combinations - definition and simple problems. Pigeon hole principle- statement and proof, extended pigeonhole principle- statement and proof.

Unit-4 Matrices and Determinants

12 hrs

Definition of matrix and order of matrix, types of matrices-column matrix, row matrix, square matrix, diagonal matrix, scalar matrix, identity matrix, zero matrix(definition and examples only, no problems),equality of matrices(definition and examples), simple problems on equality of matrices. Operations on matrices-addition, subtraction, product of two matrices, scalar multiplication of a matrix, inverse of a matrix, simple problems on these operations. Matrices applications in computer science.

Definition of determinant (definition and examples), determinant of matrix of order one , order two and order three(simple problems), properties of determinant(examples only, no verification),applications of determinants and matrices for solving the system of linear equations of two variables and three variables(simple problems),applications of determinant and matrices for checking the system of linear equations for consistency and inconsistency(simple problem).

References:

1. Text book of Mathematics – Shanthi Narayan
2. Text book of Mathematics – S. Lipschutz

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit3 and unit4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
4. The student has to attend any 05 full questions (16*5).
5. The student has to attend at least one question from each unit.

BCA 1.4 COMPUTER FUNDMENTALS

PART- A

Unit 1- Introduction to Computer Systems

12 hrs

Definition of a Computer, History of Computers, Generations of Computers, classification Of Computers, Applications of Computer, Capabilities and limitations of computer. Block diagram of a Computer with functional units (explanation), Parts of a computer system with peripherals (explanation of peripherals), and essential computer hardware , Information processing Cycle. Input and output device: Input devices-key board mouse (explanation with diagram and working), output devices, monitors types of monitors, types of printers – line and page printers, laser printer – working, advantages and disadvantages. Representation of data, text code -EBCDIC, ASCII, UNICODE.

Unit 2 Computer Organisation & Storage Device

12 hrs

Basic computer organization, bus Architecture and types .Primary Vs Secondary Storage, Primary Storage: RAM – SRAM, DRAM, SDRAM, DDR. ROM - PROM, EPROM, EEPROM, cache memory. Secondary Storage: Magnetic Tapes, Magnetic Disks. hard disks, Zip Drive, Flash Drives.

PART -B

Unit 3- MS Word and Power point

12 hrs

MS Word: Working with documents, formatting documents, Setting page style and page layout, Creating Tables, Printing documents, Mail merging.

Power point: Introduction to presentation, Creating presentation, Formatting presentation, Adding effects to presentation, Printing Handouts.

Unit 4 –MS Excel

12 hrs

Spread sheet and its applications, Data Formatting, Working with sheets, insertion and deletion of rows, columns and sheets, using formula in workbooks, creating charts, cell validation, filters.

References:

1. Computer fundamentals- V Rajaraman
2. Computer fundamentals- P B Kottur

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
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5. The student has to attend at least one question from each unit.

BCA 1.5 INTRODUCTION TO INFORMATION TECHNOLOGY

PART- A

Unit 1-Software

12 hrs

Definition of software, types of software - application software, general purpose and specific purpose, scientific and business software examples. System software - operating system, assembler, compiler, interpreter, linker, loader. Classification of programming languages - machine level, assembly level, high level languages, event driven, object oriented - advantage and disadvantages examples.

Unit 2. Computer Networks

12 hrs

Definition, uses of network, applications of computer networks, types of network- point-to-point, broadcast, LAN, MAN, WAN network topology, introduction to different protocols (TCP/IP, SNMP, SMTP, FTP, HTTP, Telnet, ARP, DNS, Gopher, POP), network transmission Media (twisted pair, coaxial, optical fiber), definitions of network interface card (NIC), Hub, Bridge, Switch, Router, Bandwidth, internet and its applications, understanding world wide web - how the web works, web browsers – examples, features, Telecommunication overview, Client server.

PART- B

Unit -3 E-Commerce

12 hrs

Defining commerce , main activities of electronic commerce, benefits, goals, components, functions, process management, service management, transaction capabilities, types, scope.

Unit – 4 Introduction to clouds, big data and IOT

12 hrs

Cloud- introduction, cloud computing at a glance. Vision of cloud computing, defining a cloud, characteristics, advantages, disadvantages, examples. Big Data – meaning, 3Vs in big data, challenges. IOT- meaning, components, scope, IOT in education.

References:

1. Computer fundamentals- V Rajaraman
2. Computer fundamentals- P B Kottur
3. Mastering Cloud. Computing - RajKumarBuyya, Christian Vecchiola and ThamaraiSelvi
4. Ecommerce concepts and applications – NidhiDhavan

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
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BCA 1.6: PROGRAMMING FUNDAMENTALS & C

PART -A

Unit 1-Problem Solving Techniques:

12 hrs

Problem solving techniques – problem definition, analysis, design, debugging, testing, documentation and maintenance. Design Tools - ALGORITHM: definition, characteristics, advantages and disadvantages. FLOWCHART - definition, symbols, advantages and disadvantages. Writing an algorithm and flowchart : Area of circle, arithmetical operations, simple interest and compound interest, quadratic equation, largest of three numbers, sum of N natural numbers, factorial of number, Fibonacci series, prime number, reverse a given number, evaluation of series like $\sin(x)$, $\cos(x)$, e^x , $\log(x)$ etc.

Unit 2- C Basics

12 hrs

History of c-programming, Features, basic program structure, character set, tokens, keywords and identifiers. Constants, variables, data types, variable declaration, symbolic constant definition.

PART - B

Unit 3 - Operators

12 hrs

Arithmetic, relational, logical, assignment, increment and decrement, conditional, bitwise and special operators, Arithmetic expressions, precedence of operators and associativity. Type conversion(implicit and explicit) and mathematical functions. Managing I/O operations – reading and writing a character, formatted and unformatted I/O.

Unit 4- Decision making, branching and looping

12 hrs

Decision making - if and if-else statement, nested if, else if ladder, switch statements, conditional operator, goto statement. Looping - while, do-while and for, nested for. break and continue statements. Programs on these concepts.

References :

1. Computer Concepts and Programming, *Padma Reddy*
2. Let us C , Yashwanth Kanetkar
3. Ansi C, *Balagurusamy*
4. Problem solving with C, M. T. Somashekara and D. S. Guru

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit3 and unit4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
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5. The student has to attend at least one question from each unit.

BCA 2.3 - Computational Mathematics -II

PART -A

Unit 1 - Graph theory

12 hrs

Definition of graph, graph as models, matrices and isomorphism, graph terminologies- definitions, properties and examples, Decomposition and special graphs. Paths, cycles and trails -connection in graphs, bipartite graphs, Eulerian circuits. Vertex, degree, bijections paths, cycles and trails-connection in graphs,

Unit 2 : Directed Graphs

12 hrs

Definition of directed graph, properties and examples, vertex degrees, Trees and distance-basic properties, properties of trees, distance in trees and graphs, disjoint spanning trees, spanning trees and enumeration of trees, Hamilton paths and circuits, Decomposition of graphs, special graphs. Optimization and trees-minimum spanning tree, shortest paths, trees in computer science.

PART- B

Unit 3 - Statistics

12 hrs

Definition, scope, characteristics, functions and limitations of statistics. Basic concepts- units/individuals, populations/universe, sample, variable, attribute, discrete variable, continuous variable, qualitative data and quantitative data. Stages of Statistical method – collection, organization presentation, analysis and interpretation of data. Classification of data - definition, objectives, types of classification, frequency, class frequency, frequency distribution ,discrete frequency distribution, continuous frequency distribution, inclusive class and exclusive class, class limits, correction factor, open-end frequency distribution, mid-point or class mark, width/size of class, number of classes, cumulative frequency, frequency density, construction of FDT for discrete and continuous data. Tabulation-definition, objectives, types of tables-one way/simple, two way and manifold tables.

Unit 4 : Central Tendency

12 hrs

Definition, average, arithmetic mean, mode, median, geometric mean and harmonic mean, advantages and limitations. Simple problems on arithmetic mean, geometric mean and harmonic mean. Measures of Dispersion - range, range coefficient, mean deviation, mean deviation coefficient and standard deviation, standard deviation coefficient (definitions only). Problems on mean deviation, mean deviation coefficient and standard deviation, standard deviation coefficient.

Reference s:

1. Introduction to Graph theory by S.Lipschutz
2. Statistics and probability by B.M Aggarwal
3. Statistics by Rajmohan

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit3 and unit4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
4. The student has to attend any 05 full questions (16*5).
5. The student has to attend at least one question from each unit.

BCA 2.4: C and Linear Data Structures

PART -A

Unit 1- Arrays and Functions

12 hrs

One and two dimensional arrays, array initialization. Strings - declaration and initialization of string variable, reading and writing strings, string handling functions. Functions – Need, syntax of function declaration, all types of functions, nesting of functions, categories, parameter passing mechanism, function with arrays.

Unit 2- Pointers & Structures

12 hrs

Pointer arithmetic, dynamic memory allocation, command line arguments. Structure-Definition, declaration, accessing structure members, structure with in structure, example programs, structure with array, union and difference between structure and union with example programs, typedef, enum

PART -B

Unit 3-Stack

12 hrs

Definition of data structure, types(primitive, non primitive-linear and nonlinear).Linear data structure-Stack: Definition and example, operations, representation of stack in C, evaluation of postfix expression, conversion from infix to postfix using stack table. Recursion: Recursive definition, and process, Recursion in C, writing Recursive programs- factorial. GCD, tower of hanoi, fibanocci, binomial coefficient, efficiency of recursion

Unit 4 –Queue and Linked List

12 hrs

Queue – Definition, operations, representation of queue in C. Types- circular queue, double ended queue. Linked list - Definition and example, insert and delete (any where), search, count and display, . Circular linked list and doubly linked list (concepts only).

References :

1. Computer Concepts and Programming, *Padma Reddy*
2. Let us C – Yashwanth Kanetkar
3. ANSIC, -*Balagurusamy*
4. Data structures using C and C++ - Yedidyahetal
5. Programming in ANSIC - E.Balaguruswamy
6. Data structures and programming design using C - Robert Kruse PIII publications
7. Data structures and applications - Trembly and Sorenson
8. Systematic approach to data structure – Padma Reddy

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
4. The student has to attend any 05 full questions (16*5).
5. The student has to attend at least one question from each unit.

BCA-2.5 DATABASE MANAGEMENT SYSTEM-I

PART- A

Unit 1-Introduction

12 hrs

Definitions of Data, database, database system, DBMS, examples, database system applications. Meaning of data and information, database management system vs. file management system, views of data, data independence, data models, database languages, database users and administrators, database system structure, application architecture, advantages of using DBMS, classification of DBMS, meaning of schema and instance.

Unit 2 -E-R Model

12 hrs

Basic-concepts, Definition of Data Models, Using high-level, conceptual data models for database design, , constraints, keys, an example database application, E-R diagram, types of entities, entity sets, attributes, types of attributes, weak entity sets, cardinality ratios (mapping cardinality), Definition of Ordinality, specialization, generalization. Differences between specialization and generalization.

PART- B

Unit 3 –Relational Model

12 hrs

Structure of relational Databases, Relational algebra - select, project. union, set difference, rename, division operations, Modification of the database, queries using relational algebra. Extended relational algebra operations.

Unit 4 - SQL

12 hrs

SQL- Background, basic structure, set operation, aggregate functions, NULL values, nested sub queries, Views, complex queries, Modification of the database, joined relations, Data Definition Language, domain constraints, referential integrity in SQL. Assertions, authorization, privileges in SQL.DDL Commands.

References:

1. Korth, Sudarshan “Database System concepts”, Mcgraw Hill-IV Edition.
2. Navathe, Silberchatz and Elmasri “fundamentals of database Systems”
3. Addison C.J. Date “Introduction to Database systems” Addison-wesley.
4. Bipin C Desai “Introduction to Data base system” Galgotia publications

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
4. The student has to attend any 05 full questions (16*5).
5. The student has to attend at least one question from each unit.

BCA-2.6 DIGITAL FUNDAMENTALS

PART- A

Unit 1- Number System and Boolean Algebra

12 hrs

Binary number system, decimal number system, octal number system, hexadecimal number system. Bases inter conversions. Representation of negative numbers - 1's and 2's complements. Codes - BCD, GRAY, EXCESS-3. Laws of Boolean algebra, Evaluation of Boolean expression, De Morgan's theorems and proof, simplification of Boolean expressions using Boolean laws, Basic gates (AND, OR, NOT): truth table, Definition, Boolean expression and symbols, universal gates (NAND, NOR) : truth table, definition, Boolean expression and symbols, SOP and POS form, min term and max term, expression of Boolean equation in Min and Max term (conversion of SOP and POS forms to standard form)

Unit 2- Logic Systems and K- Map

12 hrs

Realization basic gates using NAND and NOR gates. Realization of Boolean expression using basic gates and universal gates. XOR and XNOR gate (working, Boolean expression, symbol and truth table), **K-map method: Rules**, simplification of Boolean equation using K-map (up to 4 variables), without and with don't-care condition, Implementation using basic gates and universal gates, Quine-McCluskey Tabulation method to determine and select essential prime implicants.

PART- B

Unit 3-Combinational Logic:

12 hrs

Half adder and full adder, half subtractor and full subtractor. Code converters - BCD to Excess 3 and BCD to gray code, magnitude comparator, encoders (BCD to decimal), decoder (decimal to BCD), multiplexer(4:1 and 8:1), de-multiplexer(1:4 and 1:8).

Unit 4-Sequential Logic:

12 hrs

Introduction, Flip-flops – SR, JK, D, T, JK-MS (Detailed Study) Registers – Introduction, shift register- types and applications. Counters – synchronous and asynchronous counters (Up, down, up down and Mod counters(asynchronous only)) with timing diagram.

References:

1. Digital Logic and Computer Design- M. Morris Mano
2. Digital fundamentals – B.Basavaraj
3. Digital fundamentals – L Krishnananda

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
4. The student has to attend any 05 full questions (16*5).
5. The student has to attend at least one question from each unit.

PART- A

Unit 1 - Introduction to C++ and OOPS

12 hrs

Object Oriented Programming paradigm, Limitations of structures in C, Basic concepts of Object Oriented Programming- Classes, Objects, Data Abstraction and Encapsulation, Polymorphism, Inheritance, Dynamic binding, Message passing, Benefits of OOP, Object Oriented languages, applications of OOP.C++ features, Comparison with C, Structure of a C++ program, input and output statements Keywords, Data types, symbolic constants, type compatibility, declaration of variables, reference variables, operators in C++, control structures.

Unit 2 - Classes Objects, Member Functions And Constructors- Destructors

12 hr

Specifying a class, creating objects, memory allocation for objects, static data members, arrays within a class, local classes. Defining member functions, call by reference, return by reference, inline functions, default arguments, making an outside function inline, nesting of member functions, private member functions, function overloading, static member functions, const member functions, pointer to members, friend and virtual functions. Constructors, parameterized constructors, multiple constructors in a class, constructors with default arguments, copy constructor, dynamic constructors. Destructors.

PART- B

Unit 3-- Operator overloading And Inheritance

12 hr

Overloading unary operators, overloading binary operators, overloading operators using friends, string manipulations using operators, rules for operator overloading, type conversions. Inheritance definition, defining derived classes, types-single inheritance, making a private member inheritable, multilevel inheritance, multiple inheritance, hierarchical inheritance, hybrid inheritance, virtual base classes.

Unit 4 – Trees And Sorting

12 hrs

Tree terminologies, Binary tree, binary tree representation, types of binary tree - linked representation, tree traversals, and binary search tree and their applications, algorithm on searching element in a binary search tree, linear search and hashing, Quick sort, insertion sort, shell sort, radix sort, tree sort, heap sorting.

References:

1. E Balguruswamy, Data Structures using C
2. RB Patel, Expert Data Structures with C++, Khanna book publishing
3. YashwanthKanatkar, Data Structures through C

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
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5. The student has to attend at least one question from each unit.

BCA-3.4 DATABASE MANAGEMENT SYSTEM- II

PART -A

Unit 1- Relational Database Design

12 hrs

Review of relational algebra and relational calculus concepts, Pitfalls in relational data base design, Normalization for relational databases. Normal forms based on primary keys, General definitions of first, second and third normal forms, Functional Dependency (concept and example) decomposition, Boyce-Codd Normal Form - definition and example, fourth Normal form - Multi valued Dependencies - definition and example.

Unit 2 - Storage and File Structure

12 hrs

Overview of physical storage media, MAGNETIC AND FLASH DISKS – performance measure of a disk optimization of disk block access, RAID, improvement of reliability via redundancy, improvement of performance via parallelism RAID levels, choice of RAID level, File organization – fixed and variable length records, organization of records in files, Data dictionary, Indexing and hashing – basics , Ordered indices, , B+ index files, structure of B+ index tree.

PART- B

1.

Unit 3- Transaction management and Recovery system

12 hrs

Transaction management- Concepts, simple transaction model, storage structure, transaction atomicity and durability. Recovery system- Failure classification, storage, recovery and atomicity- log records, data modification, concurrency control and recovery, transaction commit (concepts).

Unit 4 - PL/SQL

12 hrs

Features of PL/SQL, Advantages of PL/SQL, basic syntax, data types and Subtypes. Variables -: declaration, initializing variables, variable scope, assigning SQL query results to PL/SQL variables. Constants And Literals: Declaring a Constant, The PL/SQL Literal, Operators, Precedence, Conditions: IF-THEN and it's flavours, CASE Statement, Searched CASE Statement, Basic Loop Statement, WHILE LOOP Statement, FOR LOOP Statement, Reverse FOR LOOP Statement, Nested Loops, Labeling a PL/SQL Loop, The Loop Control Statements, EXIT Statement, The EXIT WHEN Statement, CONTINUE Statement, GOTO Statement, STRINGS: Declaring String Variables, String Functions and Operators, ARRAYS: Creating a Varray Type.

References:

1. Data base system concepts - Korth , Sudarshan 6th Edition
2. Muruch's Oracle SQL and PL/SQL
3. Oracle Database 11G PL/SQL Programming

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
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5. The student has to attend at least one question from each unit.

BCA 3.5 SYSTEM SOFTWARE

PART- A

Unit 1 -Machine Architecture

12 hrs

Introduction, System software and machine architecture, Simplified Instructional Computers (SIC) and its architecture, Instruction Formats of IBM-360. Searching& Sorting - Linear and binary search, comparison, examples. Interchange sort, shell sort, bucket sort, radix exchange sort, address calculation sort, Random entry searching.

Unit 2-Assembler and Loader

12 hrs

Introduction, General design procedure, design of Assembler, statement of problem, data Structure, Format of Date bases, Algorithm for pass 1 and pass 2, look for modularity. Explanation along with flowcharts for both pass 1 and pass 2 (detailed flowchart). Introduction to loader, Loader schemes- compile and go , general loader, Absolute loader, Sub routine linkage, Relocating loader, Direct linking loader, overlays, Dynamic loading.

PART- B

Unit 3 - Macro Language and macro processor

12 hrs

Introduction, Macro instructions, Features of macro facility-macro instruction arguments, Conditional macro Expansion, Macro calls within macro, Macro instruction defining macro. Macro processor implementation: statement of problem, specification of databases and specification of database format, Algorithm and flowchart for processing macro definitions and macro expansion.

Unit 4 – Compiler

12 hrs

Introduction, Statement of problem, Phases of compiler, Detailed study of - Lexical phase, syntax phase, interpretation phase optimization phase, storage assignment phase, code generation phase, Assembly phase, passes of compiler. Data Structures: statement of problem, storage classes and its use.

References:

1. System programming – John. J. Donovan
2. System Software – Leland L. Beck, Third edition, Addison Wesley 1997
3. Systems programming and operating systems –Dhamdare

GENERAL INSTRUCTIONS FOR PAPER SETTING

1. In each paper unit-1 and unit-2 are Part-A and unit3 and unit4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
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5. The student has to attend at least one question from each unit.

BCA - 4.3 JAVA PROGRAMMING

PART- A

Unit 1 - Introduction to Java and Java Program Structure

14 hrs

History of Java, Java features, Difference between C/C++ and Java, Java program structure, Java tokens, Statements, JVM, Java environment- JDK, JSL. Data types, Constants and Variables, Operators & Expressions, Type conversions, Mathematical functions; Control Statements: Decision making, Branching and looping with while, do-while, for and labeled loops; Arrays- Declaration of 1D, 2D arrays, Class, Objects, Constructor, Method overloading, Static members. Strings-Introduction, classes and its methods. Vectors. Wrapper classes. Inheritance: Single, Multilevel, Hierarchical, Visibility modes, Method overriding, Final variable, Abstract methods and classes; **Interface**: Defining, Extending and Implementing assigning interface variables

Unit 2 – Packages and multithreading

12 hrs

Java API Packages, using system packages, naming convention, accessing and using a package, adding a class to packages, hiding classes. Multithreaded programming: Creating a thread, extending the thread class, stopping and blocking a thread, life cycle of a thread, using thread methods, thread exceptions, thread priority, synchronization, implementing the runnable interface.

PART -B

Unit 3- Exceptions and Debugging

12 hrs

Meaning of errors and exceptions, Dealing with errors, Classifications of exceptions, syntax of handling exceptions, advertising the exceptions, throwing and rethrowing exceptions, creating Exception classes, multiple catch statements, finally clause, tips for using exceptions, Debugging techniques – tricks for debugging, Assertions, Java Debugger (JDB).

Unit 4 – Applets and Graphics

10 hrs

Applets basics, applet types, applets and application, Life cycle of an applet, applet programming- passing parameter to applets, paint and repaint methods, Graphics class, Line, Rectangle, Circle, Ellipse, Arcs and Polygon. Using control loops in applets, drawing bar charts.

References:

1. Java, The Complete Reference – Patrick Naughton and Schildt
2. Programming in Java – Joseph L Weber
3. Java Programming – E Balaguruswamy
4. Object oriented programming with Java – Mt Somashekara Ds Guru Ks Manjunath

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BCA 4.4 PL/SQL DATA WAREHOUSING

PART- A

12.

Unit 1-Procedures, Functions and Triggers

12 hrs

15.

Parts of a PL/SQL Subprogram, Creating a Procedure, Executing a Standalone Procedure, Deleting a Standalone Procedure, Parameter Modes in PL/SQL Subprograms, Methods for Passing Parameters. Functions: Creating a Function, Calling a Function, Cursors : Implicit Cursors, Explicit Cursors, Declaring the Cursor, Opening the Cursor, Fetching the cursor, Closing the, Cursor, Exceptions: Syntax for Exception Handling, Raising Exceptions, User-defined Exceptions, Pre-defined Exceptions, Triggers: Creating Triggers, Triggering a Trigger

Unit 2– Packages, Collections and Transactions

12 hrs

PL/SQL — PACKAGES: Package Specification, Package Body, Using the Package Elements, COLLECTIONS: Index-By Table, Nested Tables, Collection Methods, Collection Exceptions

TRANSACTIONS: Starting and Ending a Transaction, Committing a Transaction, Rolling Back Transactions, Automatic Transaction Control. OBJECT-ORIENTED: Instantiating an Object, Member Methods, Using Map method, Using Order method, Inheritance for PL/SQL Objects, Abstract Objects in PL/SQL

PART -B

Unit 3 - Data Warehousing and OLAP

12 hrs

Data Warehouse basic concepts: ODS, ETL functions, ODS and DW architecture, Guidelines for implementing DW, Difference between ODS and DW, OLTP and DW, OLTP and OLAP, Data Warehouse Modeling, Data warehouse Schema. OLAP: Characteristics, Multi-dimensional view and data cube, Data cube operations

Unit 4 - Data Mining

12 hrs

Introduction to Data Mining: KDD process, Architecture of Data Mining, Motivating Challenges, Data Mining Tasks, Data Mining Technologies Data Pre processing: Cleaning, integration, transformation, data reduction, data normalization. Data Mining Applications. Classification and Clusters- concepts and examples, Decision tree- concepts, algorithm, creating decision tree using information gain.

References:

1. Pang-Ning Tan, Michael Steinbach, Vipin Kumar: Introduction to Data Mining Addison- Wesley,2005.
2. G.K.Gupta : Introduction to Data Mining with Case Studies, 3rd Edition, PHI, NewDelhi,2009
3. Arun K Pujari: Data Mining Techniques University Press,2ndEdition, 2009.
4. Jiawei Han and Micheline Kamber : Data Mining-Concepts and Techniques, II Edition, Morgan KaufmannPublisher,2006.
5. Alex Berson and Stephen J. Smith: Data Warehousing, Data Mining and OLAP Computing, Mc GrawHill Publisher,1997.

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BCA -4.5 SOFTWARE ENGINEERING

PART- A

Unit 1–Introduction

10 hrs

Definition of software, software problems (industrial strength software, software is expensive, late and unreliable maintenance and rework), software engineering challenges (scale, quality and productivity, attributes), software engineering approach (phased development process, managing process, components).

Unit 2 –Software processes and Software Planning

14 hrs.

Introduction to software process (processes and process modules, component of software process), characteristics of software process(predictability, support, testability and maintainability, support change, early defect removal, process improvement and feedback), and software process models (waterfall, prototype, iterative enhancement model, spiral) comparison of processmodels. Introduction to planning, effort estimation (uncertainties, building efforts, bottom-up, COCOMO model), project scheduling and staffing (overall, detailed scheduling, team structure), risk management (concepts, assessment), project monitoring plan (measurements, project monitoring and tracking).

PART- B

Unit 3 – Analysis and Design

12 hrs

Software requirements (needs and requirement process), problem analysis (informal approach, data flow modeling, object oriented modeling, prototyping), requirement specification (characteristics of SRS, components of SRS, specification language, structure of requirement document), validation. Design: Function oriented design: design principles, module level concept (coupling, cohesion), structure design methodology (DFD, first level factoring).

Unit 4 –Coding and Testing

12 hrs

Coding: programming principles and guidelines (common coding errors, structured programming, information hiding, some programming practices, coding standards), refactoring (basic concepts with examples, common refactoring), verification (code inspections, static analysis, proving correctness, unit testing). Testing: testing fundamentals, black box and white box testing, comparison between black box and white box testing, regression testing, testing process- levels of testing, test plan.

References:

1. An integrated approach to software engineering-Pankaj Jalote.
2. Roger Pressman, Software Engineering- A Practitioner's Approach TMH
3. Ian Sommerville, Software Engineering, Pearson Publications Ltd.

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BCA - 5.1 ADVANCED PROGRAMMING IN JAVA

PART- A

Unit 1 - AWT, Advanced Graphics Programming

12 hrs

Review of Java Concepts .AWT and AWT Classes, Window fundamentals – Component, Container, Panel, Window, Frame, Canvas. Working with frame window. Graphics Programming: Graphics class, methods, working with colors and fonts. Advanced graphics operations using Java2D. Designing simple User Interfaces (UIs) using AWT (Label, Text Field, Choice, List, Checkbox, Checkbox Group, Scrollbar, Button, Text Area, Panel), Layout Manager.

Unit 2 –Event Handling and Swings:

12 hrs

Event Handling: Basics of Event Handling, the delegation event model, AWT event hierarchy and event classes, Event Listener Interfaces, Adapter Classes, anonymous inner class, Event queue. Swing: Meaning, need difference between AWT and swing. The Model-View-Controller (MVC) design patterns, Creating simple UIs using swing (JLabel, JText Field, JComboBox, JList, JCheckbox, JScrollbar, JButton, JRadioButton, JScroll Pane, J Panel, J Tabel, J Tree, JFrame) and handling basic events.

PART- B

Unit 3 - File Management and JDBC

12 hrs

File, creating a file, writing to a file, opening a file, reading from a file, file management, checking existence of a file, deleting a file. JDBC: Meaning, need, concept and structure of JDBC, relation with ODBC, JDBC driver types and their meaning, the JDBC process – loading the driver, connecting to the DBMS, creating and executing SQL statement, Connection object, Statement object, Prepared Statement object, Callable Statement, Result Set, JDBCExceptions.

Unit 4 -Fundamental concepts of Collections, Generics and Java Beans

12 hrs

Collections: Meaning, need, Collection interfaces, Concrete Collections – Array List, Hash set, Map . Generics: Meaning, need, benefits, generics usage, basics of generic types, type parameter naming conventions, type wildcards, using type wildcards, generic methods, bound types, writing simple generic container, implementing container, implementing constructors, implementing generic methods. Meaning and need of Java Beans, Advantages, Bean writing process, Bean properties. Java Archives (JARs): Meaning, need, the JAR utility, Creating JARfiles.

References:

1. The Complete Reference – Java 2: Herbert Schildt, 5th Edition, Tata McGraw-Hill
2. Thinking in Java: Bruce Eckel
3. Core Java 2: Volume I – Fundamentals: Cay S. Horstmann, Gary Cornell, Pearson Education Asia.
4. Core Java 2: Volume II – Advanced Features: Cay S. Horstmann, Gary Cornell, Pearson Education Asia.

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BCA5.2 WEB PROGRAMMING

PART -A

Unit 1–Introduction

12 hrs

Internet, WWW, Web Browsers and Web Servers, URLs, HTTP, Evolution of the Web, Peak into the History of the Web, Internet Applications, Important Components of the Web, Web Search Engines, Application Servers. HTML and DHTML Concepts : Programming structure, different basic tags , Images, Hyper text Links. Lists, Tables, Forms, Frames. Cascading Style Sheets: Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The box model, Background images, The and <div> tags.

Unit 2 –The JavaScript

12 hrs

Overview of JavaScript, Execution Environment, Object orientation and JavaScript, Syntactic characteristics, Primitives, operations, and expressions, Arrays, Functions, Pattern matching using regular expressions, Examples. Events and Event Handling, Meaning of client and server, Client-Server architecture, benefits, concept of ports and sockets. Protocol – Meaning, definition, examples, meaning of stateless and state (state full) protocols. HTTP protocol – meaning, http protocol request and response header formats, status codes. Client-Server communication scenario.

PART -B

Unit 3 – JEE Technology Concepts

12 hrs

Multi-tier architecture for application development – Meaning, need, advantages. Meaning of enterprise application and web application, various tiers in enterprise application – client tier, web tier, business tier, enterprise information system tier. Introduction to JEE concepts – Need, advantages, characteristics of JEE technology, the concepts of containers, components and services – meaning of web container, application client container, EJB container.

Unit 4 – Basics of PHP and Java Server Pages Programming Concepts

12 hrs

Introduction to JSP - language structure, advantages, characteristics, comparison between Java and Java Server Pages. Various aspects of Java Server Pages programs, writing and executing JSP programs. Writing dynamic programs using JSP. Database programming through JSP. Basics of PHP : Introduction ,variables ,functions, sessions, date, my sql integrations with php, file uploading.

References:

1. The Complete Reference – J2EE – Jim Keogh
2. J2EE – Kevin Mukhar, James L. Weaver, James P Crume, RonPhillips
3. learningphp and mysql4thEdition Robin Nixon.
4. Begining php-5 and Mysql Cristian Darie.

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BCA 5.3 OPERATING SYSTEM

PART- A

Unit 1–Introduction

12 hrs

Definition of Operating System, need. Early systems – Batch Systems, Multiprogramming, Time Sharing, Parallel and Distributed systems. Special Purpose Systems – Real Time, Embedded Systems, Multimedia Systems, Handheld Systems. Computing Environments – Traditional, Client Server, Peer-to-Peer and Web based. Open Source Operating Systems.

Unit 2 –Process Management

14 hrs

Process concept – meaning of process, sequential and concurrent processes, process state, process control block, threads, Process scheduling – scheduling queues, schedulers, context switch. Operations on Processes – creation and termination. Inter process communication – Independent and co-operating processes. Communication in client-server systems – RPC and RMI. Process scheduling – Basic concepts Processor - CPU I/O burst cycle, CPU Scheduler, Preemptive scheduling, dispatcher. Scheduling criteria, Scheduling algorithm – First-Come-First-Served (FCFS), Shortest Job First (SJF), Priority Scheduling, Round Robin. Multi-level queue scheduling (Concepts only), multi-level feedback queue scheduling (Concepts only). Multiple processor scheduling, real time scheduling.

PART -B

Unit 3–Deadlocks

08 hrs

Definition with example, System model, Dead lock characterization – Necessary Conditions, Resource Allocation Graph, Dead lock prevention, Avoidance and detection, Recovery from deadlock.

Unit 4 –Memory Management, Disk and File Management

14 hrs

Logical and Physical address space, Swapping, Contiguous allocation, Paging, Segmentation, Virtual memory - demand paging and its performance, Page replacement algorithms, Allocation of frames, Thrashing. Secondary Storage Structure and Disk Management: Disk structure & scheduling methods, Disk management, disk reliability. File concepts, Access methods, Directory structure, Protection and consistency semantics, File system structure, Allocation methods, free space management.

References:

1. Abraham Silberschatz and Peter Baer Galvin, Operating System Concepts, Fifth edition, Addison - wesley 1989.
2. Milan Milonkovic, Operating System Concepts & Design, II Edition, McGraw Hill 1992.
3. Stallings, Operating Systems, Pearson Edition.
4. Tanenbaum, Operating System Concepts, Pearson Education
5. Nutt : Operating System, 3/e Pearson Education 2004

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BCA5.4 DATA COMMUNICATION

PART- A

Unit 1 - Introduction to Data Communication

14 hrs

Communication model & Data Communication networking –types. Data Transmission- Transmission terminology, Analog & Digital data transmission, Transmission impairments – attenuation, delay distortion & noise. Guided Transmission- types- Twisted pair, coaxial cable & optical fiber – physical description, application & characteristics. Unguided Transmission- wireless transmission: types- Terrestrial type, Satellite, Broadcast radio – physical description, application & characteristics.

Unit 2-Dataencoding

10 hrs

Basics, types and description of different signals, Digital data & digital signals: NRZ, multilevel binary, Bi phase techniques. Digital data & Analog signals: Encoding techniques- ASK, FSK, PSK Analog data & Digital signals: PCM & delta modulation Analog data & Analog signals: Modulation- AM & FM Spread spectrum: Frequency hopping, direct sequence Asynchronous & synchronous transmission: Line configurations- full duplex & half duplex.

PART- B

Unit 3- Data link control & medium access sub

12 hrs

Flow control: Stop and wait & sliding window flow control. Error detection: Parity check, CRC Error control: Stop and wait ARQ, Go Back-N ARQ High-level data link control: basics, Characteristics, frame structure, operation Medium access sub layer- the channel allocation problem. Multiple access Protocol- ALOHA, carriers sense multiple access protocol, collision free protocol.

Unit 4- Multiplexing and Switching

12 hrs

Frequency division multiplexing- characteristics, analog carrier systems, Time division multiplexing- characteristics, link control. Digital carrier system, ISDN user network interface. Circuit switching networks- switching concept, space division & time division switching- Pocket switching networks-principles, switching technique, and packet size. Comparison of Circuit switching & Pocket switching

References:

2. Data and Computer Communications – William Stallings.
3. Computer Networks – Andrew S.Tanen baum.
4. Data Communication – Ulysis D Black.
5. Data Communication and Networking – Behrouz A. Forouzan.
6. Internetworking with TCP/ IP – Douglas E comer, PHI

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BCA 5.5 COMPUTER NETWORKS

PART -A

Unit 1-Basics

14 hrs

Uses of computer networks, network hardware- broadcast networks, point – to -point networks, network software-protocol hierarchies, design issues, interface & services, connection oriented & connection less services, service primitives, OSI reference model- description of each layer. TCP/IP reference model, comparison of the two models, Critique of the OSI model and protocols, Critique of the TCP/IP model and protocols, Example networks-ARPANET,ATM.

Unit 2- The Network layer

12 hrs

Design issues, routing algorithms- the optimality principle, shortest path routing, distance vector routing, and link state routing. Congestion control algorithms- general principle, Congestion prevention policies, traffic shaping. The network layer in the internet - the IP protocol, IP address, and subnet. Internet control protocol.

PART -B

Unit 3- The Transport layer

12hrs

The transport service- services provided to the upper layer, quality service, and transport service primitives. Elements of transport protocol - addressing, establishing a connection, releasing a connection. A simple transport protocol- the example service primitives, the example transport entity. The Internet transport protocol (TCP & UDP)- the service model, the TCP segment header, the TCP connection management. UDP - header.

Unit 4- The Application layer

10hrs

Network security - traditional cryptography, two fundamental cryptographic principles, secret key & public key algorithms.DNS - Name space, SNMP - model.Electronic mail, architecture and services, www.

References:

1. Data and Computer Communications – WilliamStallings.
2. Computer Networks – Andrew S.Tanenbaum.
3. Data Communication – Ulysis DBlack.
4. Data Communication and Networking – BehrouzA.Forouzan.
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BCA - 6.1 UNIX OPERATING SYSTEM

PART- A

Unit 1-Introduction

12 hrs

The Unix operating system, A brief Session, The Unix Architecture, Features of UNIX, POSIX and Single UNIX specification, Locating commands, Internal and External commands, Command Structure, Flexibility of command Usage, Man Browsing the Manual Pages ON-line, Understanding the man Documentation. General-Purpose Utilities: Cal command, date command, echo, printf, bc, script, passed, who, uname.

Unit 2 – The File System

10 hrs

The file, The Parent –Child Relationship, The HOME Variable, pwd, cd, mkdir, rmdir, Absolute Pathname, Relative Pathname, ls, The Unix File system. Handling Ordinary Files: Cat, cp, rm, mv, more, The lp subsystem: Printing a File, File, wc, od, cmp, comm, diff, dos2unix and unix2dos, compressing and archiving files, gzip, and gunzip, tar, zip and unzip. Basic File Attributes: Listing file attributes, listing directory attributes, File Ownership, File Permissions, changing file permissions, Directory Permissions, Changing File Ownership.

PART- B

Unit 3 – The Vi Editor

14 hrs

Vi basics, Input Mode, Saving Text and Quitting, Navigation, Editing Text, Undoing Last Editing Instructions (U and U), Repeating the last command (.), Searching for a Pattern (/ and ?), Substitution. Process basics, process status, system process, Mechanism of process creations, Internal and external commands, process states and zombies, running jobs in background, nice, killing process with signals, job control, at and batch, cron, timing process. Simple Filters: The sample database, pr, head, tail, cut, paste, sort, uniq, tr, displaying a word- count list. Filters using regular expressions: grep, basic regular expressions, extended regular expressions.

Unit 4 –The Shell

12 hrs

The shell's Interpretive Cycle, Shell Offering, Pattern Matching, Escaping and Quoting, Redirection, /dev/null and /dev/tty, Pipes, tee, Command Substitution, Shell variables. Essential shell programming: Shell scripts, read, using command line arguments, exit and exit status of command, the logical operators && and ||- conditional execution, the if conditional, using test and to evaluate expressions, the case conditional, expr, \$0: calling a script by different names, while, for, set and shift, the here document (<<), trap, debugging shell scripts with set -x, sample validation and data entry scripts.

References :

1. Sumitabha Das, UNIX System V.4, Concepts and Applications, TMH

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BCA - 6.2 .NET PROGRAMMING

PART -A

Unit 1 - Introduction to C# & .NET platform and Building C# Applications **10 hrs**

Introduction to C# and .NET platform : .NET solution, Building blocks of the .NET platform(CLR, CTS, CLS), Role of .NET base class libraries, .NET Aware programming languages, role of common intermediate languages & type metadata and assembly manifests, A tour of the .NET namespaces. Building C# Applications : Role of the command line compiler(csc.exe), Building a C# application using csc.exe, the command line debugger(cordbg.exe), using the visual studio.NET IDE & its debugging, C# pre-processor directives.

Unit 2 - C# language fundamentals **14 hrs**

Anatomy of a basic C# class, creating objects: constructor basics, Default assignments & variables scope, variables initialization syntax, basic inputs & output with the console class, understand static methods, arrays & string manipulations, Encapsulation Services, Class Properties , Read and Write only Properties, Static Properties, Inheritance Is As keyword Usage, Controlling Base Class Creation With Base, Sealed Classes, Delegation , Polymorphism, The Virtual and Override Keywords ,Abstract Classes, Abstract Methods

PART- B

Unit 3 - Exception & object life time and Interface and Collections **12 hrs**

Exception & object life time :The Basics of Object Life Time, The Role Of Application Roots, Understanding Object Generations, The Role Of .NET Exception Handling, Throwing a Generic Exception ,Catching Exceptions, Properties of Exception, Multiple Exception (Concepts Only),The Finally Block. Interface & Collections : Definition, Implementing an Interface in C#, Interface members at object level, Interface as Parameters, Interface as Return Values, Arrays of Interface Types, Interface Hierarchies, Interface as polymorphic agents, Exploring the system. Collections Namespaces.

Unit 4 – Introducing windows forms **12 hrs**

Overview of the system. windows. Forms Namespaces, An Anatomy of a Form, A Simple Form Program, Function with Control Class, The Functionality Of the Form Class, Component class, control class, Programming with windows forms controls : Working with Button types, Check Boxes, Radio Buttons, Group Boxes, List Boxes, Calender control, assigning tool tips for controls. The Two Faces Of ADO. NET, Understanding ADO.NET Data Providers, Understanding The Connected Layer of ADO.NET, Working with Connection Object, Inserting, Updating and Deleting Records

References:

- 1 Pro C# with .NET 3.0 Andrew Troelsen
- 2 2 C# Programming E Balaguruswamy

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BCA - 6.3.1 ELECTIVE-I DIGITAL IMAGE PROCESSING

PART- A

Unit 1- Digital Image

12 hrs

Introduction: Motivation and Perspective, Scenes and Images, Application: Components of Image Processing System. Visual Preliminaries: Brightness Adaptation and Contrast- Acuity and Contour, Texture and Pattern Discrimination, Shape Detection and Recognition- Perception of Color. Image Formation: Geometric Model, Basic Transformations, Perspective Projection, Camera Calibration- Photometric Model. Digitization: Sampling, Quantization, Visual Detail in the Digital Image, Digital Image, Elements of Digital Geometry.

UNIT-2: Image Processing

12 hrs

Image Enhancement: Contrast Intensification, Smoothing, Image Averaging, Mean Filter, Ordered Statistic Filter, Edge Preserving Smoothing Low Pass Filtering. Image Sharpening, High, Pass Filtering, Homomorphic Filtering. Restoration: Minimum Mean, Square Error Restoration, Least Square Error Restoration, Constrained, Least Square Error Restoration, Restoration by Singular Value Decomposition- Restoration by Maximum A Posterior Estimation, Restoration by Homomorphic Filtering.

PART- B

UNIT-3 :Image Compression

12 hrs

Error Criterion: Lossy Compression methods, loss –less compression, Huffman coding, Run length coding- Block coding, Quad Tree coding- contour coding. Registration: Geometric Transformation, Plane to Plane Transformation, Mapping Problem in Discrete Domain –Stereo Imaging Algorithms.

Multi-Valued Image Processing: Processing of color Images, Processing of Satellite Image, and Medical Image Processing. Segmentation: Region Extraction-Pixel based Approach, Feature Thresholding, Optimum Threshold, Threshold Selection Methods, Multi-level Thresholding, Local Thresholding, Region based Approach.

UNIT-4: Image Analysis and Feature Extraction

12 hrs

Edge and Line Detection: Edge Detection, Derivation operators, Pattern Filling Approach, Morphologic Edge Detection, Edge Linking and Edge Following, Edge elements Extraction by Thresholding, Edge Detector Performance, Line Detection, Corner Detection. Representation: Topological Attributes, Geometrical Attributes, Some other Properties, Description, - Boundary based Description-Region based Description-Relationship. Recognition: Deterministic Methods, Clustering, Statistical Classification, Fuzzy Mathematical Recognition, Syntactic Recognition, Grammar, Recognition Strategy, Tree search, Graph Matching.

References:

- 1) B. Chand and D. Dutta Majumder, Digital Image Processing and analysis, PHI(2001)
- 2) Milan Sonka, "Image Processing Analysis and Machine Vision", PWS Pub. 2nd Ed.
- 3) Adrian Low, Computer vision and Image Processing, McGraw Hill (1991)
- 4) Kenneth R. Castle man, Digital Image Processing, PHI

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BCA - 6.3.2 ELECTIVE-I CLOUD COMPUTING

PART- A

Unit1 - Cloud Computing Basics

12 hrs

Cloud Computing Overview- Applications – Intranets and the cloud – Why Cloud Computing Matters – Benefits – Limitations – Companies in the Cloud Today – Cloud Services.

Unit 2 - Cloud Computing Technology

12 hrs

Hardware and Infrastructure – Clients – Security- Network – Services – Accessing the Cloud - platforms – Web Applications – Web APIs –Web Browsers –Cloud Storage – Overview – Cloud Storage Providers –Standards –Application – Client – Infrastructure – Service.

PART -B

Unit 3 - Cloud Computing At Work

12 hrs

Software as a service – Overview – Driving Forces – Company offerings – Industries– Software plus Services – Overview - Mobile Device Integration –Providers – Microsoft Online.

Unit 4 - Developing Applications

12 hrs

Google – Microsoft – Intuit Quick Base – Cast Iron Cloud – Bungee Connect - Local clouds and Thin Clients – Virtualization – Server Solutions – Thin Clients. Cloud Services for Individuals – Cloud services aimed at the mid-market –Enterprise-Class Cloud Offerings – Migration.

References:

1. Velte T. Antony, Velte J. Toby. andElsen Peter Robert (2010), “Cloud Computing: A Practical Approach”, Tata McGraw- Hill
2. Miller Michael (2008), “Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online”, Que Publishing.
3. Beard Haley (2008), “Cloud Computing Best Practices for Managing and Measuring Processes for On-demand Computing, Applications and Data Centers in the Cloud with SLAs”, EmereoPvt. Limited.

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BCA- 6.4.1 ELECTIVE-II COMPUTERGRAPHICS

PART -A

Unit 1 - Introduction to Multimedia

12 hrs

Definition, CD-ROM and the multimedia highway, Uses of Multimedia, Introduction to making multimedia – The stages of Project, the hardware & software requirements to make good multimedia, Multimedia skills .Multimedia building blocks- SOUND: MIDI, Digital audio, audio file formats. Images: still images, color and file formats. ANIMATION: principles of animation, making animation. VIDEO: using video, how video works, and video standards.

Unit 2 - Introduction to Graphics applications

12 hrs

CAD , presentation graphics, computer art, entertainment, education and training, visualization, image processing. Display devices – raster scan displays – color CRT, DVST, LCD, 3D viewing devices. Raster scan systems, Random scan systems.

PART-B

Unit 3 -Output primitives

12 hrs

Points and lines, line drawing algorithm, DDA algorithm, Bresenham's line algorithm, examples, parallel line algorithm, loading the frame buffer, circle generating algorithm, midpoint circle algorithm, and ellipse generating algorithm. Pixel addressing and object geometry. Color and gray scale levels, color tables, character attributes. Basic Transformations- translation, scaling, rotation, matrix representation and homogeneous coordinates, composite transformations, general pivot point and fixed point rotation, scaling directions, other transformations – reflection, shear, transformation between coordinates, inverse transformations.

Unit 4- Windowing and Clipping

12 hrs

Introduction, the viewing transformation, viewing transformation implementation, clipping, Cohen-Sutherland outcode algorithm, Liang-Barsky line clipping algorithm, Sutherland- Hodgeman polygon algorithm and adding clipping to the system, text clipping, exterior clipping, curve clipping.

References:

1. Tay Vaughan "Multimedia – making it work", TMH publication, fifth edition.
2. D Hearn & M P Baker: "Computer Graphics C version", Pearson Education
3. D Newman and Sproull: "Principles of Interactive Computer Graphics -, TMH, II edition.
4. Steven Harrington "Computer graphics: A programming Approach", TMH publication. Second edition
5. Roy plastock and Zhigang Xiang: " Computer graphics". Schaum's outline series, II edition.

GENERAL INSTRUCTIONS FOR PAPER SETTING

In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
4. The student has to attend any 05 full questions (16*5).
5. The student has to attend at least one question from each unit.

BCA - 6.4.2 ELECTIVE-II OPERATIONS RESEARCH

PART-A

Unit1-Operations Research & Linear Programming

14 hrs

Operations research: Nature and meaning, models characteristics, advantages, scope. Linear Programming Problems: Formulation (both minimization and maximization type) solution of LPP using graphical method. General LPP. Basic solutions and degenerate solutions. Standard form and canonical form. Characteristic features of LPP. Simplex method for solving LPP.

Unit 2 - Transportation Problem

12 Hrs

Big-M method and 2 phase method for solving LPP. Transportation Problem - Formulation, Necessary and sufficient condition for the existence of feasible solution to a Transportation problem. Initial Basic Feasible Solution by North West Corner Rule, Least Cost Method and Vogel's Approximation Method. Optimal solution using U-V method.

PART-B

Unit 3 – Assignment Problem and Game Theory

14 Hrs

Assignment Problem.:Formulation, optimal solution using Hungarian algorithm, traveling salesman problem. Game Theory:Basic definitions, minmax - maxmin principle and optimal strategy solution of games with saddle point, dominance rule for solving a two-person Game, Graphical method for solving two-person game.

Unit 4 -Network analysis

10 Hrs

Basic differences between PERT and CPM, PERT, CPM, Network components and precedence relations, rules of network construction, errors and dummies in network, critical path analysis, project time cost trade-off, resource allocation.

References:

1. S. D. Sharma – Operations research
2. Hamdy A. Taha, “ Operation Research – An introduction” 5th edition, PHI.,
3. KantiSwarup, P. K. Gupta &Manmohan – “Operation Research”, 1996.
4. S. Kalavathy: “Operations Research”, Second Edition – Vikas Publications

GENERAL INSTRUCTIONS FOR PAPER SETTING

In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.

1. In each paper unit-1 and unit-2 are Part-A and unit-3 and unit-4 are Part-B.
2. There shall be 08 questions (4 questions from each part).
3. Each question must contain sub-questions-(a),(b),...
4. The student has to attend any 05 full questions (16*5).
5. The student has to attend at least one question from each unit.

I -SEMESTER

Excel & C Lab

PART- A

1. Write DOS commands for the following:
 - a. To create a file
 - b. To view a created file
 - c. To edit the contents of file
 - d. To rename an existing file
 - e. To delete an existing file
2. Write DOS commands for the following:
 - a. To make a directory
 - b. To rename a directory
 - c. To delete a directory
 - d. To change the directory
 - e. To display date, time and version

PART -B

Table A					Use only Formula's to Derive the results	
Sales Person	Gender	Number of Sales	Sales Amount	Sold Month and Year	Questions	Answers
Cara	F	10	8000	12013	Sum of sales amount	
Jessy	F	7	6000	12013	Average of sales amount	
Lewis	M	5	4000	32013	Minimum Sales amount	
Tommy	M	3	2000	42013	Maximum number of sales	
Annie	F	2	2000	12013	Count of Sales Person	
Jack	M	3	2000	52013	Count of Male Sales person	
Hugo	M	1	400	52013	Sum of Sales amount of Female Person	
Jonathan	M	1	400	72013	Average of sales amount of Female Person	
Aaron	M	1	400	12014	Average of Sales amount made in January 2013	
Willy	M	4	2800	82013	Median of Total Sales amount	
Patrick	M	3	900	12013	First Quartile to Sales Amount	
Simmons	M	5	1750	12014	Third Quartile to Sales Amount	
Patrick	M	6	2250	82013		
Taylor	M	2	800	42013	Populate the number of sales for below listed Sales Person (Use formula)	
Boon	M	3	1275	42014	Sales Person	Number of Sales
Walsh	M	1	450	72013	Aaron	
Julie	F	5	2375	22013	Patrick	

1. Consider the above excel sheet and derive the answers using formulae
2. Demonstration of sorting, filters and advanced filters
3. Usage of pivot table.

PART -C

1. Program to find the biggest and the smallest among 4 numbers using nested if.
2. Program to find the roots of quadratic equation.
3. Program to check whether the given number is Armstrong number, odd or even, perfect square or cube.
4. Program to check whether nth prime is palindrome.
5. Program to find the factors of nth Fibonacci number.
6. Program to convert decimal to binary.
7. Program to generate n terms of the series 1,-2,6,-24,120.....
8. Program to find e^x using n terms of the series $1 + x + x^2/2! + x^3/3! + \dots$
9. Program to count the number of vowels, consonants and special characters in a string by reading the string character by character.
10. Generate n prime numbers and print them in the following pattern

2 3 5 7 11 13 17 19 23 29 ...	OR	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53.....
--	----	---

PRACTICAL EXAM SCHEME

Practical Proper: 60 Marks

Record : 10 Marks

Viva : 10 Marks

DOS (any 5 commands) (10 marks)	Writing of DOS Commands	5 Marks
	Error free execution of DOS Commands	5 Marks
MS Excel (10 marks)	Any five functions from questions 1 2 and 3 Proper syntax and result (2 marks each)	10 marks
C- Program (40 marks)	Flowchart/Algorithm	5 Marks
	Program writing	20 Marks
	Correct program and Error free compilation	10 Marks
	Correct output	5 Marks

II -SEMESTER

DATA STRUCTURES & Advanced Excel Lab

PART -A

1. All types of data validation
2. Data visualisation using charts
3. Data visualization using scatter charts, spark lines and gauge charts
4. Usage of hyper links.

PART -B

1. Program to insert an element at given position in an array.
2. Program to multiply two matrices using functions.
3. Program to swap two integers using function with call by value and call by reference mechanism.
4. Program to create a dynamic array of n elements and find their sum and print in reverse order using functions with pointers(sum(int *,int)and rev_print(int *,int))
5. Program to store information of n students (name, regno, dob, m1,m2,m3,tot, avg and result) in an array of structures and find total, average and result using function.
6. Program to find a^b using union to store the values of a, b and a^b (for both int and/or float values of a and b)

PART- C

1. Program to implement the operations of stack using array.
2. Program to implement the operations of circular queue.
3. Program to convert infix expression to prefix notation.
4. Program to evaluate postfix expression.
5. Program to implement any three recursive functions.
6. Program to implement queue using linked list.
7. Program to evaluate an expression using linked list

PRACTICAL EXAM SCHEME

Practical Proper: 60 Marks

Record : 10 Marks

Viva : 10 Marks

MS Excel (10 Marks)	Any one problem from the list	10 Marks
C- Program (25 marks)	Flowchart/Algorithm	5 Marks
	Program writing	10 Marks
	Correct program and Error free compilation	5 Marks
	Correct output	5 Marks
Linear Data Structure (25 marks)	Algorithm	5 Marks
	Program writing	10 Marks
	Correct program and Error free compilation	5 Marks
	Correct output	5 Marks

III- -SEMESTER DS Lab Using C++

PART- A

1. Consider a class student with data members name, regno, course, m1, m2, m3 and member functions getdata(), showdata(), result() to read, print and tabulate result. Write C++ program to store the details of n students and display their result in tabulated form.
2. Write a C++ program to define a class BankAccount including the following class members and store information of n customers and display their details. DataMembers:, cust name, accno, balance.
Member Functions: a) getdata(custname,accno,balance). b) display(). c).Transaction(tr_type,amt) if Tr_type='D' transaction is deposit else transaction is withdrawal. This function should update the balance according to tr_type after checking the minimum balance of Rs 1000.
3. Write C++ program to demonstrate operator overloading
4. Program to demonstrate the use of simple, parameterised and copy constructors
5. Program to demonstrate inline and friend function.
6. Program to demonstrate function overloading.
7. Program to demonstrate multiple or multilevel inheritance

PART- B

1. Program to demonstrate the operations of doubly linked list
2. Program to demonstrate tree traversal
3. Program to implement tree sort.
4. Program to implement quick sort
5. Program to implement heap sort.
6. Program to implement radix sort.
7. Program to demonstrate time and space complexity in binary and linear searching
8. Program to compare shell and insertion sort methods.

PRACTICAL EXAM SCHEME

Practical Proper: 60 Marks

Record : 10 Marks

Viva : 10 Marks

C++- Program (25 marks)	Program writing	15 Marks
	Correct program and Error free compilation	5 Marks
	Correct output	5 Marks
Linear Data Structure (35 marks)	Flowchart/Algorithm	10 Marks
	Program writing	15 Marks
	Correct program and Error free compilation	5 Marks
	Correct output	5 Marks

III-SEMESTER SQL LAB

- I. Create emp and dept tables as below and write SQL statements for the following queries
Emp(ename not null, eno primary key, doj date, dob ,mgrno self reference key, salary >0 , comm, deptno foreign key)
Dept(dname not null, dno primary key, location)
1. Find the employee details in ascending order of their name and descending order of their salary
 2. Find the details of all employees in the research department
 3. Find the minimum, maximum and average salary of each department
 4. Find department name having least number of employees
 5. Find the department name having highest annual payroll
 6. Add an employee under the manager smith
 7. Find the employees who are not getting commission
 8. Display the eno, name manager name and department name in the order of their department
- II. Create tables as below Student(name string, regno string primary key, dob date, doj date ,course string foreign key) Markscard(regno foreign key, sem string, sub1 number, sub2 number, sub3 number, tot number, avge number, result string)
Calculate total, average and result using update statement
Write SQL statements for the following queries.
1. List the names of students studying in BCA course in the order of their joining
 2. Find the name of student who has scored highest marks in every sem of each course
 3. Count the number of students in each course (consider only distinct students of the course)
 4. Find the course having second highest number of students
 5. Raise the marks of sub3 in III sem BCA students by 5% if the student has failed in that subject
 6. Display the details of student 'xxx' in every semester.
- III. Dept(deptno integer pkey, dname string not null, loc string not null)
Emp(eno integer pkey, ename string, deptno fkey, desgn string not null, bsal number>0)
Salary(eno fkey, da, hra, gross, it, pf, net, comm) DESGN ARE manager, clerk, salesman.
Comm=5% of basic if desgn=salesman otherwise null. Da=15% bsal hra = 7% of bsal
gross=bsal+da+hra.
IT =0 if gross<15000
= 10% of gross if gross between 15000 and 30000
=20% of gross if gross between 30000 and 50000
= 30% of gross otherwise
PF =10% of gross or 1000 whichever is less. Calculate salary using update statement
Write sql statements for
1. Count the number of employees in every designation
 2. List the employees of every department in descending order of their net salary
 3. List the name and salary of highest salary payer in every department
 4. List the name of employee paying highest IT in each department
 5. List the departments in every location
 6. Raise the basic salary by 10% for the managers of every department.

- IV. Create tables as below
 Employee(eno primary key, ename, street, city)
 Company(cno primary key, cname, city)
 Works(eno foreign key, cno foreign key, sal>0)
 Manages(mno foreign key from employee table , eno foreign key from employee table)

Write sql statements for the following queries

1. Find the name of all employee working in the city in which they live
2. Find the company having most employee
3. Count the number of employees under each manager.
4. Find the company having second highest payroll
5. Find employee drawing more salary than his manager in every company
6. Raise the salary of every manager by 25%
7. Find name of employees who are not having managers
8. Find average, highest and lowest salary of every company
9. Delete the employees and the information of company 'xxx'

PRACTICAL EXAM SCHEME

Practical Proper: 60 Marks

Record : 10 Marks

Viva : 10 Marks

Table creation	10 Marks
Inserting proper data	08 Marks
Table updation (if necessary)	12 Marks
5 / 7 writing	15 / 21 Marks
Execution	15 / 21 Marks

IV -SEMESTER PLSQL BASIC PROGRAMS

PART - A

1. Create a library table with attributes book id, author_name, publisher, price and edition. Write PL/SQL code block to accept the publisher name and count number of books under that publisher and display it. Also display the publisher with maximum publication.
2. Write a function to display employee name with distinct salaries
For eg
if a 's salary is 100
b 's salary is 200
c 's salary is 100
display either (a or c) and b
3. Write a function to rank the employees based on their salary (use RANK function)
4. Write a function to validate the Employee email id.
5. Write a procedure to capture the error log in a table in case of an exception using Autonomous_transaction,
6. From employee table, store ename and salary in varrays and display the contents of the arrays in table format.
7. Write an Anonymous block which raise a user defined exception on thursday?
8. Write an anonymous block using associative array that is indexed by a string, populates it, and prints it.

PART -B

1. Write a pl/sql code block to create a table and menu driven code to add, modify and drop specified column in it.
2. Write a pl/sql code block to create a database and menu driven code to add, rename and drop specified table into it.
3. Write a PL/SQL cursor program which is used to calculate total salary from emp table without using sum() function?
4. Create a trigger to record the changes like insert, update, delete over the employee table (The changes should be recorded in new audit table Employee_au)
5. Write a function to remove the duplicates in the employee table and copy all the records into another new table.
6. Write a function using bulk collect , to process set of 100 records in one iteration
7. Write a statement trigger on emp table such that the insertion is possible only on Thursday.
8. Write a function using dynamic sql statements , where the column names and the table name should be provided as input to the function.
9. Write an anonymous block to create nested tables and compare the values in nested tables
10. Write an anonymous block using multilevel VARRAY
11. Write an anonymous block to check if a collection element exists or not ?
12. Write a function using NEXT and PRIOR to access the elements in a collection TABLE

PRACTICAL EXAM SCHEME

Practical Proper: 60 Marks

Record : 10 Marks

Viva : 10 Marks

Part A (20 marks)	Program writing	10 Marks
	Error free compilation	05 Marks
	Correct output	05 Marks
Part B (40 marks)	Program writing	20 Marks
	Error free compilation	10 Marks
	Correct output	10 Marks

IV -SEMESTER

Java Lab

PART- A

1. Write a Java program to display only those multi-digit prime numbers between a given range whose digit sum is prime. Display the prime number and its digit sum side by side. Read the value for the range using *readLine()* method of *BufferedReader* class.

Sample output:

If range is; m = 20, n=50

Prime number	Sum of digits
23	- 5
29	- 11
41	- 5
43	- 7
47	- 11

2. Write a Java program to sort the elements of a square matrix. Read the order and elements of the matrix during execution. Before sorting the elements of the matrix, display the source matrix.

Sample output:

Input Matrix is:

20 2 35

4 16 7

41 3 2

Matrix elements after sorting:

2 2 3

4 7 16

20 35 41

3. Write a java code to create a class with data members name, category, doj, and fees and static members total_fee, categorywise_no_students, methods to Insert data using parameterized constructor, display student information along with total fees and number of students in each category.
4. Write java program to demonstrate method overloading to generate random numbers, random alphabet sequence and random strings.
5. Assume that an examination authority conducts qualifying examination for candidates twice each year. First, in the month of June, second, in the month of December. Before the exam, it opens a registration process so that candidates register themselves. After the end of the registration dates, the authority consolidates the list of candidates and generates the unique register numbers. These numbers are assigned to each candidate. The format of the register numbers is as below. Each register number should contain exactly 10 characters.

	year of Registration	cle	cial Number
--	----------------------	-----	-------------

For example, if year of registration 2018, cycle 2 and there are five candidates registered then, registration numbers are: QE20182001, QE20182002, QE20182003, QE20182004, QE20182005.

The serial numbers should contain exactly 3 digits. To maintain it, prefix zeros as needed. (up to 9 serial number should be prefixed with two zeros, after 9, upto 99 it should be prefixed with single zero and after 99, no zeros). Write a Java program to generate the registration numbers as per the above requirement.

6. Write a Java program to read name, register number, date of birth, address, phone number a student. Concatenate these to frame a single content by delimiting each detail with a special symbol, pass it to a method which should separate and display the details of the student. Declare a class containing the following methods:

void getInformation() – to read student information. It should call concatenate(,,,) by passing relevant information.

void concatenate(String name, string regNo, String dob, String address, String phoneNo)

to join the information to frame a single content. It should call

extractInformation(...) by passing the concatenated information.
void extractInformation(String joinedInfo)
to extracted concatenated contents and to display the information.

Declare another class to contain main () method which calls *void getInformation()*.

Sample output:

Student Name: Venkata Krishna

Register Number: BC171128

Date of Birth: 10/05/1996

Address: No. 5, First Cross, Nehru Nagar, Sagar.

Phone Number: 9900990099

Concatenated content:

Venkata Krishna%BC171128%10/05/1996%No. 5, First Cross, Nehru Nagar, Sagar.%9900990099

(Application: This is the way using which collection of information is communicated between client and server in networked environment)

7. Consider class person with fields name, address and date of birth and methods read_data() and show() and another class employee inherited form person class with fields emp_id, date of join and salary and methods read() and show(). Write java program to implement the concept of single inheritance with method overriding concepts for the above classes.

PART B

1. Write a Java program to create a vector, add elements at the end, at specified location onto the vector and display the elements. Write an option driven program using switch...case and also insertion of any type of objects must be possible. Read input as strings and find the type of data and convert them into appropriate objects of appropriate classes. (Ex: 10 must be converted to object of Integer class, 2.5 into object of Float class etc.). Handle exception while converting the inputs.
2. Declare an interface containing methods *float addition(float x, float y)* and *float subtraction(float x, float y)*. Declare the classes implementing the interface to perform respective operations as listed below.

Bank - to carryout deposit and withdrawal operations. In addition to the implementation for the abstract methods, the class should contain additional methods to read and display customer information to perform the respective transaction.

EmployeeSalary - to calculate the gross and net salary. In addition to the implementation for the abstract methods, the class should contain additional methods to read and display employee information, allowance amount and deduction amount to perform the respective transaction.

Main class - which instantiates above two classes and calls respective methods.

3. Write java program to demonstrate multi level inheritance using appropriate real life example.
4. Write a java program to create a package Number which contains a class with three static methods prime, fibanocii and Armstrong that checks whether the passed value is belongs to the corresponding types.
5. Write a java program to demonstrate multithreading using runnable interface.
6. Write an applet to display the address of a person (atleast 4 lines) using parameter passing concept. Appropriate message should be displayed for wrong input.
7. Write an applet to draw a polygon based the number of sides of the polygon as input. Ex. If sides =3 it should draw a triangle, for 4 square for 8 octagon etc.
8. Write an applet to draw n squares, rectangle and circles.

PRACTICAL EXAM SCHEME

Practical Proper: 60 Marks

Record : 10 Marks

Viva : 10 Marks

Part-A (25 marks)	Program writing	15 Marks
	Correct program and Error free compilation	5 Marks
	Correct output	5 Marks
Part-B (35 marks)	Program writing	20 Marks
	Correct program and Error free compilation	10 Marks
	Correct output	5 Marks

KUVEMPU



UNIVERSITY

Revised syllabus

BCA, B. Sc (Computer Science) and BA (Computer Applications)

W.E.F 2019-20

**DEPARTMENT OF P.G. STUDIES AND RESEARCH IN
COMPUTER SCIENCE,**

JANNASHAYADRI , SHAKARGHATTA

SHIMOGA, KARNATAKA

NEW SYLLABUS FOR B.A (Computer Applications)
(EFFECT FROM 2019-20)

Paper code	Semester	Subject	Weekly hours	Internal marks	External marks	Practicals	Total
BAC-1	I	Computer Fundamentals	4+3	10	50	40	100
BAC-2	II	C-programming	4+3	10	50	40	100
BAC-3	III	Introduction to Data Structure	4+3	10	50	40	100
BAC-4	IV	OOPS with C++	4+3	10	50	40	100
BAC-5.1	V	JAVA	4+3	10	50	40	100
BAC-5.2	VI	DBMS	4+3	10	50	40	100
BAC-6.1	VII	Internet Programming	4+3	10	50	40	100
BAC-6.2	VIII	SE&CN	4+3	10	50	40	100

FIRST SEMESTER BA (Computer Applications)

Computer Applications -I

BAC-1 Computers Fundamentals

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction:

10 hrs

Definition of computer, Characteristics of computer, history of computers, generations of computer, functional units of a computer, types of computers-based on principle of working, based on size & speed, Definitions of digital computer & analog computer, Definition of super computer, example for super computer.

Unit 2- Hardware:

10 hrs

Input Device- Keyboard & mouse, OCR, OMR. Output device- monitor and brief description of CRT monitor, Printer and brief description of dot matrix printer, Projector and Headphone (Definition and Uses). Memory-Primary memory: RAM, types of RAM, ROM and its types, Difference between RAM & ROM, Secondary memory: Brief description of working of hard disk and floppy disk, Types of CD-ROM.

Unit 3-Software :

10 hrs

Definition of software, types of software's – application, system and utility software, Definitions of assembler, compiler, interpreter, linker, loader. Types of Programming Languages -assembly language and machine level language (advantage and disadvantages). Definition of operating System, functions of an operating system, types of operating system, MS DOS Commands with syntax and example (copycon, type, copy, rename, del, make directory, remove directory, dir and its types, copy files from one drive to other drive, tree, hiding files)

Unit 4-Problem solving techniques:

09 hrs

Algorithm-definition, Characteristics, Notations, Advantages and Disadvantages. Flowchart-Definition, Symbols, Advantages and Disadvantages. Writing an algorithm and flowchart: Area of circle, Arithmetical operations, simple interest and compound interest, Swapping of two numbers, largest of two numbers, factorial of a number, reverse a number, Fibonacci series.

Unit 5-Logic gates:

09 hrs

Binary number system- Conversion of decimal number into binary number and Conversion from Binary to Decimal number system. ASCII code(brief), Gates – AND, OR, NOT, NAND, NOR, XOR (Definition, Truth Table & Logic Symbol), De-Morgan's Theorem (Statement and Proof). Boolean Laws.

References:

1. Computer fundamentals- P B KOTTUR
2. Computer fundamentals- RAJARAMANNA
3. Digital Logic and Computer Design- M. Morris Mono

QUESTION PAPER PATTERN FOR I SEMESTER B.A (Computer Applications)**PART -I:** 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL :COMPUTER BASICS LAB

1.DOS COMMANDS: DATE , TIME, CLS, COPY CON, TYPE, DIR with wild cards, MD, CD, RD, COPY, XCOPY, FORMAT, DISKCOPY etc.,.

2.MS-WORD:Drafting, Entering, Working with all Menus, Using different fonts and colours the following:

1. Bio-Data
2. Application for Job
3. Joining Report
4. Creation of Marks Card

3.MS-EXCEL:Drafting, Entering, Working with all Menus, Using different fonts and colours the following:

1. Bio-data
2. Creation of marks card
3. Result calculation

4.POWERPOINT: Formatting, updating and printing of the following:

1. Text matter with different fonts
2. Preparing Charts : Pie Chart
3. Preparing Graphs: Bar Graph
4. Introducing Animation
5. Introducing Sound Effect
6. Using Hyperlinks

PRACTICAL EXAM SCHEME

- Practical Proper - 30 marks
- ✓ **DOS COMMANDS**–Any two 2X 5marks=10 m
- ✓ arks (writing-2 marks and execution-3marks)
- ✓ **MS-WORD/MS-EXCEL/POWERPOINT**-20marks(writing-10marks and execution-10 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

SECOND SEMESTER BA (Computer Applications)

Computer Applications -II

BAC-2 C- Programming

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1-Introduction to C:

10 hrs

History of C, features of C, basic structure of C, character set, tokens- keywords, identifiers, constants, variables, strings, definition, types, rules for naming, syntax for the declaration, symbolic constant definition.

Unit 2- Operators:

10 hrs

Increment and Decrement operators, Arithmetic, relational, logical, assignment and bitwise operators, conditional operator and special operators of C, data type conversion, precedence and associativity of operators. Mathematical functions. Formatted and unformatted Input and Output functions – gets(), puts(), getchar(), putchar(), printf() and scanf().

Unit 3-BranchingControl Structures:

09 hrs

Conditional Control Structures: If Statement, if-else statement, nested if, Switch statement (Explanation with syntax, flowchart and example), goto statement (syntax and example, use).

Unit 4- Looping Control Structures:

09 hrs

while, do-while and for statements (Explanation with syntax, flowchart and example),Nested for statement. Unconditional control statements - break continue, return and exit(syntax and example).

Unit 5-Arrays and Functions:

10 hrs

Definition of array, Declaration and initialization, One and two dimensional arrays, string definition, Declaration and Initialization of String variable, String handling functions. Definition of Function, syntax for function declaration and function definition, types of functions, Recursion –definition and example.

References:

1. Computer Concepts and C Programming by P B Kottur.
2. Ansi C, by Balagurusamy E

QUESTION PAPER PATTERN FOR II SEMESTER B.A (Computer Applications)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL : C PROGRAMMING

1. Conversion of temperature given in Degree Fahrenheit to temperature in degree Celsius using the formula $C = (F-32)/1.8$ and vice-versa.
2. Find the biggest amongstwo numbers.
3. Find whether the entered number is odd or even.
4. Arithmetic operations using switch statement.
5. Check whether an entered number is Prime number or not.
6. Find the Fibonacci series between M and N.
7. Searching an element in an array.
8. Addition of two matrices
9. Find the factorial of a number using function.
10. Perform swapping of two numbers using functions

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

THIRD SEMESTER BA (Computer Applications)

Computer Applications -III

BAC-3 INTRODUCTION TO DATA STRUCTURES

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction :

10 hrs

Definition of Structure, syntax and example for structure declaration. Definition of union, syntax and example for union declaration, difference between structure and union. Pointers–Definition, Declaration, Examples. Dynamic memory allocation functions – syntax and examples. Definition of Data Structure and types of data structures with examples.

Unit 2- Stack and recursion:

10 hrs

Definition and example of stack (LIFO), operations of stack with algorithms, applications of stack, algorithm for the conversion of infix to postfix expression. Tower of Hanoi problem and Factorial of a number using recursion.

Unit 3- Queue :

10 hrs

Definition and example of Queue (FIFO), operations on queue, types of queue – ordinary queue and circular queue (definitions only), disadvantages of ordinary queue. Linked list–Definitions and types of lists – Single Linked List, Doubly Linked List (definitions only).

Unit 4-Tree :

09 hrs

Definition of a Tree, Definition of root, left sub tree, right sub tree, degree of node, terminal node, depth, Definition of Binary tree, types of binary trees (definition only), Algorithm for tree traversal.

Unit 5-Sorting and searching :

09 hrs

Definition of sorting, explanation of bubble sort, radix sort and merge sort with examples. Definition of searching, explanation of Binary search and Linear search with examples.

References:

1. Systematic approach to data structure –A M Padmareddy
2. Programming in ANSI C - E Balaguruswamy
3. Datastructures and applications - Trembly and Sorenson

QUESTION PAPER PATTERN FOR III SEMESTER B.A (Computer Applications)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL :DATA STRUCUTRES LAB USING C

1. Employee program using structure.
2. Implementation of stack
3. Recursive program to simulate Tower of Hanoi concept
4. Recursive program to find factorial of a number
5. Implementation of queue
6. Implementation of linked list
7. Binary tree traversals
8. Bubble sort
9. Binary search
10. Linear Search

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

FOURTH SEMESTER B.A (Computer Applications)

Computer Applications -IV

BAC-4 OBJECT ORIENTED PROGRAMMING WITH C++

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to OOP:

10 hrs

Object Oriented Programming paradigm, Basic concepts of Object Oriented Programming- Classes, Objects, Data Abstraction and Encapsulation, Polymorphism, Inheritance, Dynamic Binding, Message passing, Benefits of OOP, Object Oriented languages, applications of OOP.

Unit 2-Introduction to C++:

10 hrs

Difference between C and C++, Structure of a C++ program, input and output statements, tokens - Keywords, identifiers, constants, strings and operators, reference variables – definition and example, special operators in C++, brief introduction to control structures in C++.

Unit 3-Classes Objects and Member Functions:

10 hrs

Difference between structure and class, syntax and example for class declaration, Definition of data member and member function, Defining member function inside and outside the class, inline functions, memory allocation for objects, static data members and static member functions, function overloading, definition of friend function, syntax and example for the declaration of friend function, special characteristics of friend function.

Unit 4-Constructors, destructors and Operator overloading:

09 hrs

Definition of a constructor, types - parameterized constructor, default constructor, copy constructor, special characteristics of constructor, definition of a destructor, special characteristics of destructor, definition to Operator overloading, overloading binary operator (+) to add two complex numbers, rules for operator overloading.

Unit 5: Inheritance and templates:

09 hrs

Inheritance definition, forms of inheritance, syntax and example for defining derived classes, visibility modes, explanation of multilevel inheritance and hybrid inheritance with examples. Definition of templates, syntax and example for class and function template.

Reference Books:

1. Object Oriented Programming with C++ - E Balaguruswamy
2. C++ - The Complete Language – BjarneSchildt
3. Object Oriented Programming in Turbo C++ - Robert Lafore

QUESTION PAPER PATTERN FOR IV SEMESTER B.A (Computer Applications)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL :C++ LAB

Write a C++ Program:

1. Which reads a radius of a circle and computes the area of the circle.
2. Which takes an 'n' digits integer number as input and computes the sum of the digits and prints it.
3. To check whether the number is palindrome or not.
4. To find the result of a student using class concept.
5. To Define a class employee having data members name, basic salary, net salary with the member function getdata(), showdata(). Calculate the net salary assuming appropriate % for all allowance and deductions using class concept.
6. To concatenate two strings using library functions.
7. To print Fibonacci series using constructor.
8. To find biggest of two numbers using function overloading.
9. To calculate area of triangle, rectangle and circle using function overloading.
10. To implement Multilevel inheritance by creating classes: Grand Father, Father and Son

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Flowchart/Algorithm 05 Marks
- ✓ Program Writing 15 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

FIFTH SEMESTER B.A (Computer Applications)

Computer Applications -V

BAC-5.1 DATABASE MANAGEMENT SYSTEM

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction DBMS:

10 hrs

Meaning of data and information, definitions of database, applications of database system, definition of DBMS, disadvantages of file processing system (advantages of DBMS), three levels of data abstraction, difference between schema and instance, definition of data models, types of data models (brief explanation), database languages – DDL and DML.

Unit 2- E-R model :

10 hrs

Different types of database users, functions of Database Administrator (DBA), basic-concepts - Primary keys, foreign key, super key, definition of E-R diagram, symbols used in E-R Diagram, E-R diagram for Banking enterprise, E-R diagram for Book store, types of entities, entity sets, attributes, types of attributes, weak entity sets, cardinality ratios (mapping cardinality).

Unit 3- Relational model:

10 hrs

Fundamental operations of Relational algebra - select, project, union, set difference, join, division operations (explanation with examples). Types of aggregate functions – MAX, MIN, SUM, COUNT and AVERAGE (Definition with example).

Unit 4-SQL:

09 hrs

Definition of Query, explanation of basic structure of SQL – Select, from and where clauses in SQL, data types in SQL, explanation of set operation in SQL – Union, intersection, except, NULL values.

Unit 5- Database:

09 hrs

design Pitfalls in relational database design, definition of Normalization, Various types of Normal forms (Definitions only) – First Normal form, Second Normal form, Third Normal form, Boyce-Codd Normal Form (BCNF).

Reference Books:

1. Korth, Sudarshan “Database System concepts”, Mcgraw Hill-IV Edition.
2. Navathe, Silberchatz and Elmasri “fundamentals of database Systems”-Addison Wesley-2004
3. C.J. Date “Introduction to Database systems” Addison-wesley.
4. Bipin C Desai “Introduction to Data base system” Galgotia publications

QUESTION PAPER PATTERN FOR V SEMESTER B.A (Computer Applications)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL :SQL LAB

- I. Design an ER-Diagram for representing the BANK scenario.
- II. Design an ER-Diagram for representing the College Library Scenario.
- III. Use the default EMP and DEPT tables to write SQL statements for the following queries
 1. Find the employee details in ascending order of their name and descending order of their salary
 2. Find names of all employees whose name starts with 's'.
 3. Find names of all employees who have at least 6 characters in their name.
 4. Find the details of all employees in the research department
 5. Find the minimum, maximum and average salary of each department
- IV. Create table with the following fields:
TEACHER (teacher-Id, Name, Subject(sub1,sub2,sub3))
Write SQL queries to perform the following:
 1. List all the teachers whose teacher-Id lies between 10-20.
 2. List all the teachers whose name starts with letter 'a'.
 3. List all the teachers who are teaching 'sub2'.
 4. List the teacher whose teacher-Id is 12 and teaching 'sub2'.

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Writing ER-Diagram-10 Marks
- ✓ Table creation & data insertion -10 marks
- ✓ SQL queries- 2 X 5 marks =10 marks[Queries writing 3 marks (each) and Execution 2 marks (each)]
- Viva – voce - 05 Marks
- Record - 05 Marks

FIFTH SEMESTER BA (Computer Applications)

Computer Applications -VI

BAC-5.2 JAVA PROGRAMMING

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction:

10 hrs

History of Java, Java features, Difference between C/C++ and Java, Java and Internet, Java and WWW, Web browsers, Java support system, Java Development Kit (JDK), Application Programming Interface(API), Java Runtime Environment (JRE).

Unit 2-Overview:

10 hrs

Structure of Java program, Java tokens, java character set, Java Statements, Implementing Java program, Java Virtual Machine, difference between Applets and applications,

Unit 3- Control Statements and operators in Java:

10 hrs

Constants, Variables and Data Types in Java, Type casting, Arithmetic operators, relational operators, logical and assignment, conditional, bitwise and special operators, Control Statements: Branching Decision making – if, if-else, nested if, else-if ladder & switch and Looping statements with while, do-while, for statements.

Unit 4- Method overloading:

09 hrs

Definition of a Class, syntax and example for the declaration and for defining the class, Objects, class members, Constructor, Method overloading, Inheritance: forms of inheritance, Method overriding, Visibility Controls.

Unit 5-Packages :

09 hrs

Array – 1D array, declaration, creation and initialization of 1D array, Strings – String methods, Vector – Vector methods, , Defining, Extending and Implementing Interfaces, Definition of a Packages, Java API Packages, Creation, accessing and usage of packages.

Reference Books:

1. Programming with Java- A primer, 4th Edition, by E balaguruswamy.
2. The Complete Reference – Patrick Naughton and Schildt
3. Programming in Java – Joseph L Weber

QUESTION PAPER PATTERN FOR I SEMESTER B.A (Computer Applications)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL – JAVA PROGRAMMING LAB

1. Write a Java program to convert the given temperature in Fahrenheit to Celsius and display the values in tabular form.
2. Write a Java program to generate first n odd numbers.
3. Write a java program to find area of circle and rectangle using method overloading.
4. Write a Java program to find the circumference of the circle using interface.
5. Write a java program to sort the alphabets in the given string.
6. Write a Java program to create a vector, add elements at the end, at specified location onto the vector and display the elements. Write an option driven program using switch...case.
7. Write a java program to accept student information using array of objects and constructor initialization.
8. Write a java program to perform matrix addition and multiplication using case statement
9. Write a java program to implement constructor overloading by passing different number of parameter of different types.
10. Write a java program to accept student information to perform relevant computation using single inheritance.

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Writing 20 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

SIXTH SEMESTER BA (Computer Applications)

Computer Applications -VII

BAC-6.1 INTERNET PROGRAMMING

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction:

10 hrs

Internet basics, basic concepts, communicating on the internet, internet domain, internet server identities, establishing connectivity on internet, client IP address, Overview of TCP/IP and its services, TCP protocols – WWW,FTP, TELNET.

Unit 2-Introduction to HTML:

10hrs

Information files creation, Web server, web client/browser, HTML tags, structure of HTML program, Text formatting, Text styles, text effects.

Unit 3-Lists:

10hrs

Definition, types - Unordered and ordered list, adding graphics to HTML Documents. Tables – Definition, table tags and attributes. Definition of Link and its attributes, external and internal document references.Images as Hyperlinks.

Unit 4- Frames:

09 hrs

Definition, tags, examples. Cascading Style Sheets (CSS) and its Attributes – font, color and background, text, border, list. Span and Divtags.External Style sheets.

Unit 5: Introduction to Javascript:

09 hrs

Web pafes, Forms, Form validation, Netscape and javascript, Client side javascript, Advantages of javascript, writing javascript into HTML, Basic programming Techniques - Data types and literals, Creating Variables.

References:

1. Web enabled Commercial Application Development using HTML, JAVASCRIPT, DHTML and PHP, by IVAN BAYROSS, 4th Edition, BPB Publication.

QUESTION PAPER PATTERN FOR VI SEMESTER B.A (Computer Applications)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL – INTERNET PROGRAMMING LAB

1. Working with web browsers
2. Understanding the working of a web server
3. Home Page Design – Bio Data
4. Home Page Design – College
5. Home Page Design – With Audio Integrated
6. Home Page Design – With Video Integrated
7. Home Page Design – With Audio and Video Integrated
8. Home Page Design – With Animation

PRACTICAL EXAM SCHEME

- Practical Proper - 30 Marks
- ✓ Program Writing 20 Marks
- ✓ Correct output with proper display 10 Marks
(Partial output – 05 marks)
- Viva – voce - 05 Marks
- Record - 05 Marks

SIXTH SEMESTER B.A (Computer Applications)

Computer Applications -VIII

BAC-6.2 SOFTWARE ENGINEERING & COMPUTER NETWORKS

Theory Examination- 50 Max marks.

Number of Teaching hours –48

Internal Assessment- 10 Max marks

Unit 1- Introduction to Software Engineering:

10 hrs

IEEE definition of Software and Software Engineering, Software Problems, Software engineering challenges, Software quality attributes, phases in software development (Phased Development process), Definition of Software process, Component software process, desired characteristics of software process, Software development process models- waterfall model.

Unit 2- Software design:

09 hrs

Definition of SRS, need for SRS, Characteristics of SRS, Structure of SRS, design principles, module level concepts – coupling and cohesion.

Unit 3- Coding and testing :

09 hrs

Definition of Coding, Programming principles and guidelines, definition of testing, testing fundamentals, levels of testing, Difference between black box testing and white box testing.

Unit 4-Introduction to Computer networksand Network Hardware:

10 hrs

Definition of computer network, Goals of computer network, Types of Networks based on transmission technology - Broadcast, point- to -point, Types of Networks based on size & scale - LAN, WAN, MAN, Protocol hierarchies (Network software), Network topologies – Bus, Mesh, Ring, tree and star.

Unit 5- Network Software, Reference models and Transmission Media:

10 hrs

Reference models - OSI / ISO model, TCP / IP model, Transmission Media - twisted pair, coaxial cable, fiber optics cable, Internet and its applications, Wireless media - Bluetooth, Wi-Fi.

References:

1. An integrated approach to Software Engineering:PankajJalote.
2. Software Engineering a practitioners approach : Roger Pressman.
3. Computer Networks:5th Edition, Andrew S Tanenbau

QUESTION PAPER PATTERN FOR VI SEMESTER B.A (Computer Applications)

PART -I: 05 Marks

There shall be 05 questions each carrying 01 Marks from all units

PART -II: 10 Marks

There shall be 05 questions each carrying 02 Marks from all units

PART- III: 15 Marks

There shall be 05 questions from 05 units, each question carrying 05 Marks, The student has to attend only 03 questions out of 05 questions.

PART- IV: 20 Marks

There shall be 03 questions and each carrying 10 Marks.

The student has to attend only 02 questions.

(Each question should have at least two sub questions)

Question 1 from Unit 1

Question 2 from Unit 2 & Unit 3.

Question 3 from Unit 4 & Unit 5.

PRACTICAL: PROJECT LAB

PROJECT LAB EXAM SCHEME

The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories. The project is of 3 hours/week for one (semester VI) semester duration and a student is expected to do planning, analyzing, designing, coding and implementing the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.

The Project work should be either an individual (one) or a group of not more than five members.

The project proposal should include the following:

- Title
- Objectives
- Input and output
- Details of modules and process logic
- Limitations of the project
- Tools/platforms, Languages to be used
- Scope of future application

The examiner will evaluate the project work as follows:

- Project Report - 10 Marks
- Project Demo - 10 Marks
- Viva-Voce - 20 Marks