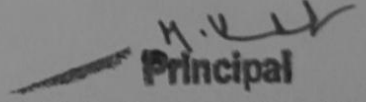


Details of Assignment

Sl.No	Department Name	2016-17	2017-18	2018-19	2019-20	2020-21
1	KANNADA	50	40	45	50	55
2	ENGLISH	-	-	50	70	80
3	HINDI	10	12	10	10	10
4	SANSKRIT	-	-	-	1	1
5	URDU	15	8	10	12	5
6	HISTORY	30	45	40	47	52
7	ECONOMICS	-	-	57	42	78
8	POLITICAL SCIENCE	2	-	-	-	2
9	CHEMISTRY	6	5	7	5	4
10	ELECTRONICS	-	-	5	10	10
11	ZOOLOGY	30	25	20	30	20
12	COMPUTER SCIENCE	-	-	-	-	20
13	COMMERCE	-	-	-	10	10

NOTE: The above table reflect the details of assignments of various departments. The sample photocopy of the assignments is attached.


Principal
D. V. S. College Of Arts & Sci
Shimoga.

D. V. S. COLLEGE OF ARTS AND THE SCIENCE

An assignment on,

Molecular Biology - Nucleic Acids

2016 -17

Submitted to,
Sheela madam
Department of Botany.

Submitted by,
Vinutha D.L.
III year - Bsc.

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7. Reference 11

Molecular Biology - Nucleic acids

Nucleic acids are found in all viruses, living organisms and carry the genetic information from one generation to next generation. Generally, in Eukaryotes the nucleic acids are associated with protein to form nucleoprotein and in prokaryotes the nucleic acids are not associated with protein.

Friedrich Miescher (1869) a Swiss biochemist first isolated a new class of chemicals from the pup cells, leucocytes obtained from discarded surgical bandages, which he called 'nuclein'. These substances, later were called nucleic acid by Altmann in the year 1899 because of their acidic properties and association with nucleus.

P. A. Laverne in the year 1920 worked out the basic chemistry of nucleic acids, discovering that there are two types of nucleic acids.

- i) Deoxyribase nucleic acids (DNA)
- ii) Ribonucleic acids (RNA)

Deoxyribonucleic Acid (DNA)

- The DNA is found in all plants, animals, prokaryotes and some viruses. In the Eukaryotes it is present in the nucleus, chloroplast, and in mitochondria whereas in prokaryotes, it is present in the nucleoid.
- The DNA present in the nucleus is found in the chromosomes.
- In plants, animals and some viruses the DNA is double stranded except in viruses such as bacteriophages, ϕ d and some animal virus, parvovirus. In these viruses, the DNA is single stranded.
- In Eukaryotic cells, the DNA is associated with the protein called histones to form nucleoproteins. In prokaryotes, the DNA lacks histones.

DNA as the genetic material

In 1938 Frederick Griffith, a British medical officer working on the pathogenicity of a bacterial strain Streptococcus pneumoniae (Diplococcus pneumoniae) discovered the process of transformation. This strain of bacteria causes bacterial pneumonia in mammals including man. This bacterium is found in two forms as follows.

chemical Composition of DNA

DNA is a macromolecule made up of many monomeric units called nucleotides. There are four types of monomers known as deoxyribonucleotide monomers or the deoxyribotides. Each deoxyribonucleotide consists of a pentose sugar, a phosphate group and a nitrogenous base. Purine bases are heterocyclic and two ringed and pyrimidine bases are one ringed bases.

Component of Deoxyribonucleotide

- i) Deoxyribose : A pentose sugar consisting of four carbon atoms 1, 2, 3 and 4 which combine with one oxygen to form a ring and fifth atom forms a CH_2 group which is present outside this ring. These -OH groups are attached at position 1', 3' and 5' and the hydrogen atoms linked at carbon 1', 2', 3' and 4'.
- ii) Nitrogen bases : There are two groups of nitrogen bases, pyrimidines and purines. Pyrimidine molecule is a six numbered aromatic ring that consists two nitrogen atoms at position 1 and 3. Purine molecules are larger when compared to pyrimidines. The purine molecules consist of a pyrimidine ring fused with an imidazole ring with nitrogen 1', 3', 7' & 9' positions.

pyrimidines consists - Thymine and Cytosine
 purines consists - adenine and guanine
 Uracil is present in RNA in place of a thymine.

iii) A phosphate group : In DNA, a phosphate group (PO_4^{3-}) is attached to the 3' carbon of deoxyribose sugar of one nucleotide and 5' carbon of the deoxyribose sugar of next nucleotide

iv) Nucleosides : The combination of nitrogen bases and pentose sugar are called as nucleosides.

on the basis of different nitrogen bases the nucleosides of DNA are as follows.

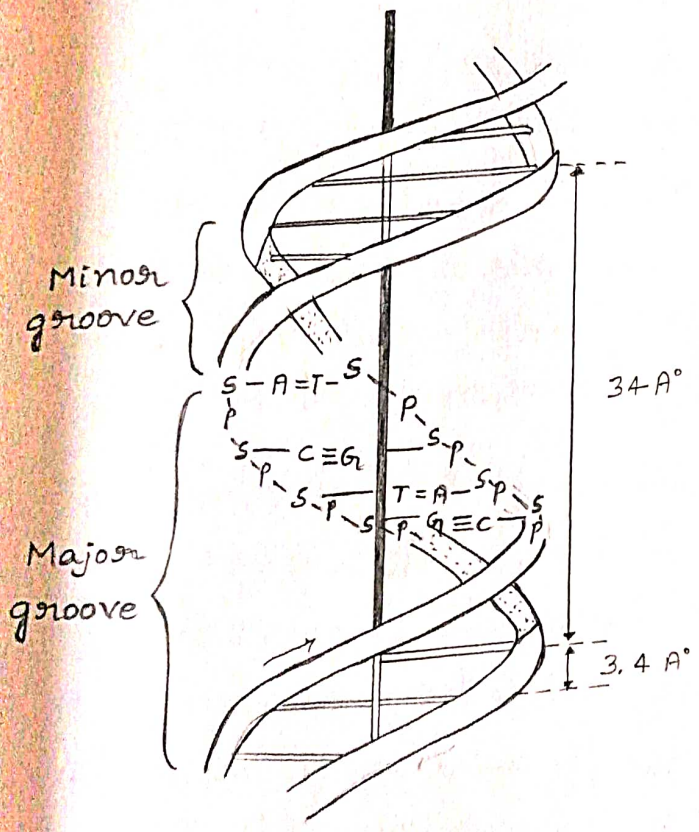
1. Deoxyribose + Adenine → Deoxyadenosine
2. Deoxyribose + Guanine → Deoxyguanosine
3. Deoxyribose + Cytosine → Deoxycytidine
4. Deoxyribose + Thymine → Deoxythymidine

v) Nucleotides : The nucleotides are monomeric units of nucleic acid. The nucleotide consists of a nucleoside linked with phosphoric acid by a phosphoester bond.

vi) polynucleotides : The four nucleotides are present in plenty and are linked by phosphodiester bonds to form a polynucleotide chain.

Structure of DNA (Watson - Crick model)

James D. Watson and Francis H.C. Crick in the year 1953, of Cambridge University in England, on the basis of studies of Pauling and Corey, Chargaff's analytical results and Franklin and M.H.F. Wilkins x-ray diffraction studies and crystallographic data proposed a three dimensional model to explain the structure of DNA.



The Watson - Crick model of DNA

The following are some of the characteristic features of DNA model

- DNA molecule is composed of two polynucleotide strands running antiparallel to each other

→ The polynucleotide strand is made up of backbone of sugar and phosphate forming its long axis, and bases are at right angles to it.

→ Each polynucleotide is made up of many nucleotides which are linked by phospho-diesters bonds.

→ The two polynucleotide strands of DNA molecule are coiled right handedly to form a double helix. Such a form of DNA is now called B-DNA.

→ The two polynucleotide chains are held by hydrogen bonds between the purine and pyrimidine bases of opposite strands. pairing of bases is specific i.e., the adenine pairs with thymine and guanine pairs with cytosine.

→ The amount of purines and pyrimidines are equal ($A + G = T + C$). The amount of adenine is equal to Thymine and amount of cytosine is equal to amount of guanine. According to Chargaff's rule of equivalence, $A = T$ and $C = G$.

The ratio of $\frac{A+T}{C+G}$ is always constant.

→ The bases in the two polynucleotide strands are complementary to one another.

Ribonucleic acid - RNA

Occurrence

Ribonucleic acid is mainly found in the cytoplasm, little in nucleolus and in nucleoplasm associated with chromosomes. It is present in all organisms, prokaryotes and the Eukaryotes. It usually occurs as long unbranched polymeric molecule made up of single chain of polynucleotide. In certain viruses where the RNA is double stranded. It is the genetic material in some plant viruses and plays a major role in protein synthesis.

Chemical Composition

RNA molecules are synthesized all the time during the life of a cell. It takes place on one of the strands of DNA by a process called transcription.

The general structure and composition of RNA is similar to that of DNA but differs from DNA with certain features. It is a macromolecule made up of many monomeric units called nucleotides. There are four types of ribonucleotides. Each ribonucleotide consists of a pentose sugar, a phosphate group and a nitrogen base. Purine nitrogen bases are adenine and guanine, and the pyrimidine bases are cytosine and Uracil.

D.V.S College
of Arts & Science
Shimoga.

Submitted to: →

Sheela mam

Botany lecturer

D.V.S College
Shimoga.

2017-18

Submitted by: →

Aleera Nazam

I B.Sc [CBZ]

D.V.S College

Shimoga.

CYANOBACTERIA

We have studied two types of Cyanobacteria.
1) Nostoc 2) Spirulina.

1) NOSTOC: → Akubata

The genus Nostoc is a common blue green algae found in fresh water, moist soil etc. forming small light green mucilaginous balls. It is also found generally in rice fields, occasionally it may be found on moist barks of trees. It secretes a large amount of mucilage which holds together hundreds of filaments. They are also distributed in tropical and sub tropical regions of the world. Approximately more than 24 species of Nostoc are identified so far. Certain species of Nostoc are also occurred as endophytes, present with the body of other plants like thallus of Anthoceros, roots of Cycas etc.

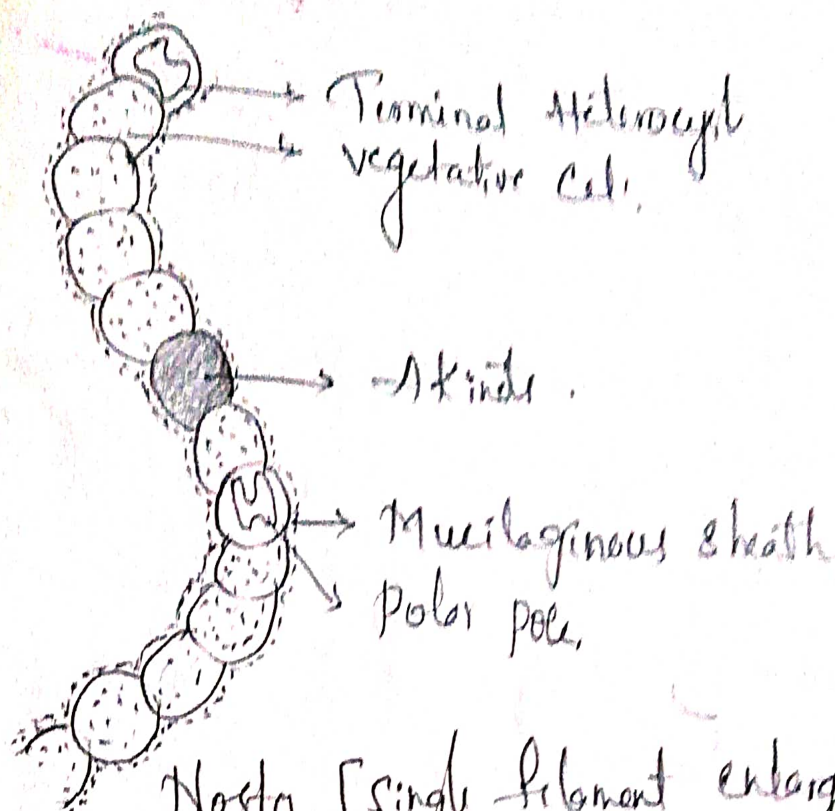
Systematic position: →

Class - Cyanophyceae
Order - Nostocales

Family - Nostocaceae

Genus - Nostoc.

Morphology: →



Nostoc [single filament enlarged]
The plant body of Nostoc is trichome. The trichome is unbranched & consists of many oval or bead-like cells attached end to end. Heterocysts are thick-walled and colourless cells. Depending on their position in the trichome they may be called "intercalary and terminal". Each heterocyst consists of a swelling at the poles called 'polar nodules', through which cytoplasmic connections run. Heterocysts are supposed to help in reproduction.

2. SPIRULINA :-

Systematic position :-

Class - Cyanophyceae

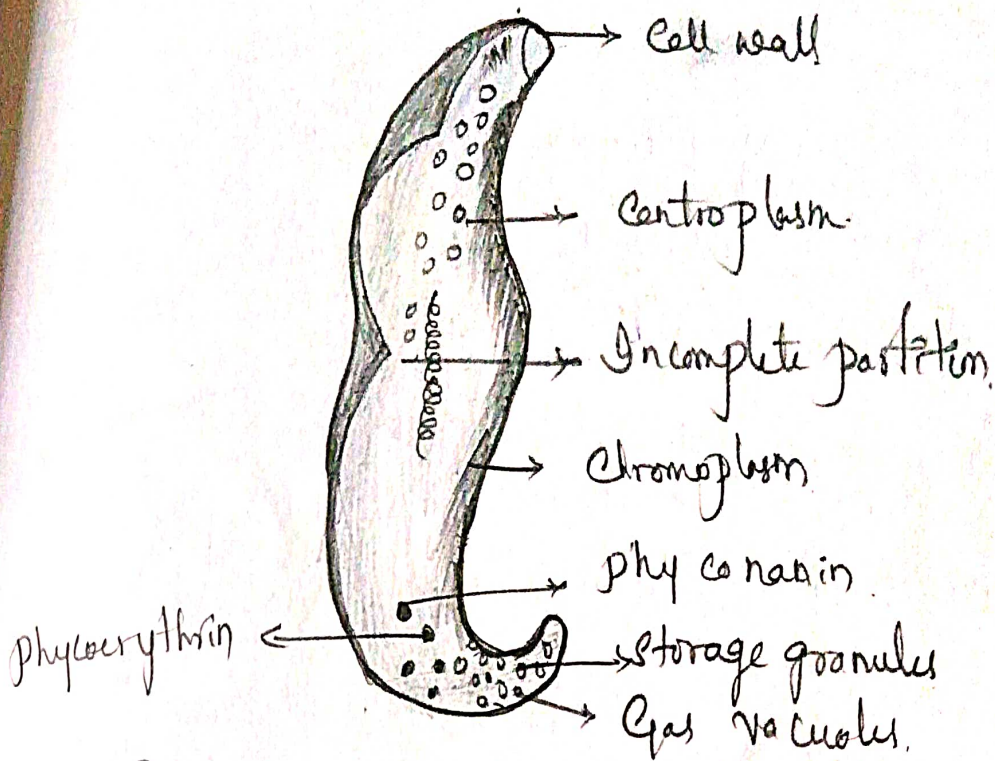
Order - Nostocales

Family - Oscillatoriaceae.

Genus - Spirulina

Habitat :- Spirulina is a free floating alga found in fresh water ponds & ditches. It is one of the common planktonic alga. The alga may also grow in brackish water containing high concentration of salts. Some of the common Indian species are *S. subtilissima*, *S. mayordna*, *S. subals*, *S. platensis* etc.

Structure of the plant body :- plant body of Spirulina is trichome & formed by a single long spirally twisted cell. Sometimes cross walls may be found making multicellular. According to some phycologists the cross walls are incomplete. The spiral cells twisting of the trichome may be loose or close and the cells are cylindrical in shape and are without sheath. The terminal cells is rounded and is without calyptra.



Spirulina (enlarged filament)

The cells exhibit active rotational movement.

Reproduction: No sexual reproduction. Asexual reproduction is by fragmentation.

Economic Importance

1) Spirulina is a N_2 fixing blue green algae.

2) Spirulina causes water blooms.

3) Some of the current researches indicate that Spirulina holds a great promise as a source of single cell protein.

Even though much research work has been conducted

the single cell algae Chlorella as a source of food

research, on Spirulina is still in its infancy. Biotech-
nology Section of CFTRI has done a great deal

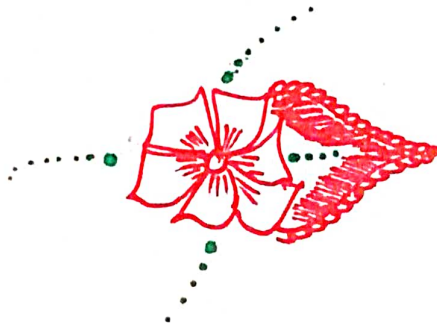
D.V.S. ARTS AND SCIENCE
COLLEGE

NAME :- NAGMA KHANUM

CLASS :- B.Sc. [CBZ].

TOPIC :- PALYNOLOGY

SUBMITTED TO :- SHEELA MAM



2018 - 2019



PALYNOLOGY

Introduction:

Palynology is the science that studies pollens.

Palynology is a relatively recent science and there are many opportunities for its practical application. The study of the symmetry, polarity, shape, size, structure, sculpture and of the aperture of the sporodermis can be very useful to many other sciences. Pollen is an indicator which enables researchers to study the phytogeography of the past, plant evolution, climates, rock and soil characteristics, air pollution levels, plant-insect relationships and the botanical and geographical origin of bee products etc...

To understand pollen polarity it is necessary to study the situation inside the tetrads of the anthers; at first the pollen grains resulting from the meiotic division of mother cells are gathered into groups and they can remain like this forming diads, tetrads or polyads. The tetrads can be tetragonal, tetrahedral or rhomboidal the polyads can be formed by a larger number of

granules. Observing the position that the pollen grain first has in the tetrahedral agglomerate 2 poles are noted: the proximal and the distal. If the poles are equal, the pollen is defined as isopolar and if they are unequal as anisopolar. Spherical pollens have no polarity.

The description of a pollen is based on particular ratios and measures that best characterize that particular pollen. The morphology of a pollen grain is measured by the ratio of the length of the polar axis to the equatorial diameter; the correlation between Sporodermis and pollen size is measured by the ratio between Sporodermis thickness and the equatorial axis; in reality the indicator of the polar area is the ratio of this area to the equatorial diameter but in practice only the distance between colpi extremities near the poles is measured.

Different types of pollen symmetry exist; there are isopolar granules in radial symmetry; i.e. granules with a horizontal symmetric plane and two or three vertical symmetric planes; then there are anisopolar granules in radial symmetry.

Shape :-

The ratio between the polar axis and the equatorial diameter of a pollen gives us the shape of the pollen. Pollen shapes have been classified as follows.

a) Perprolate.

b) Prolate

c) Subprolate.

When observed in polar view, a pollen grain will have one of the following shapes: circular, semi-angular, interhexagonal, angular, interangular, semi-lobate, intersemi-lobate, lobate, interlobate, hexagonal, intersemiangular, subangular and intersubangular.

For the fresh compounds a more restricted and synthetic terminology is used: circular, subcircular, subtriangular, quadrangular, penta-hexagonal etc. While in equatorial view the most typical shapes are circular, rhomboidal, apiculate, rectangular and oval. In asymmetrical pollen the pollen can be either biconvex or concave-convex (mauvejo and Louveaux).

Sizes:-

They vary greatly, but are generally divided into six categories, although this number could be increased.

Very small pollens (*Myriophyllum*).

Small pollens (*Salix*).

Medium pollens (*Quercus*).

Large pollens (*Zea*).

Very large pollens (*Cucurbita*).

Giant pollens (*Mirabilis*).

Apertures:-

In some cases pollens do not have apertures but more frequently they do. Traditional palynology usually characterizes apertures by their number, position (position) and shape (character). The APC parameter is fundamental in pollen description. The number can vary from N1 to N7: N1 is attributed to pollens with one aperture; N7 is for pollens with several apertures. Triaperturate pollens are-

marked with No. The position parameter in pollens has 7 variables - p_0 to p_6 in p_0 the location of the apertures is unknown; if the apertures is in a pole it is defined as proximal or distal P_2 designates a pollen with two apertures - both at the pollen poles. If the apertures are set in the equatorial zone then this is a zonal position pollens with apertures distributed over the whole granule surface. are identified as P_6 . Apertures are also characterized by their shape. In C_0 the aperture is indistinct. while in C_1 it is represented by a more or less regular area. In C_2 the aperture is indistinct, while in C_1 it is represented by a less regular area. In C_2 the aperture is divided into three anastomosed arms (tricholomcolpate pollens) (Some palmas, many spores). C_3 is the term used for sulcus-shaped apertures and C_4 for pore-shaped ones; we can refer to these as colpate and porate pollens. C_5 is used for colporate pollens, i.e. pollens whose apertures have both a pore and a colpus. Lastly there are the C_6 pororate pollens which have.

boils a pore and a colpus. Lastly there are the GG pororate pollens which have either a colpus or a pore externally and a circular oval part set in their centre.

The following are some easily remembered examples: monocolpate, with one colpus (*Allium*); monoporate, with one pore; dicolpate, with two colpi; porate, with two pores (*Colchicum*); dicolporate, with two colpi and two pores; dioxalate with three colpi; Stephanocolpate, with more than three colpi in equatorial position (*Thymus*); Stephanoporate (*Campanula*); Stephanocolporate; pericolpate; periporate (*Chenopodium*); polyangulate with very short colpi; Synaccolpate, where the extremities colpi alternate with pseudocolpi heteroporate.

The apertures can be elongated along the meridional axis (longate) or long the equatorial axis; the colpi can be short or very short; the colpi are sometimes surrounded by an ectexine frame; the pores are sometimes surrounded by a circular ring. Near the frame.

2019-2020

DVS College Of Arts and
Science, Shivamogga

Submitted from,
Manasa. A.M.
I BSC, CBZ
I Semester

Botony

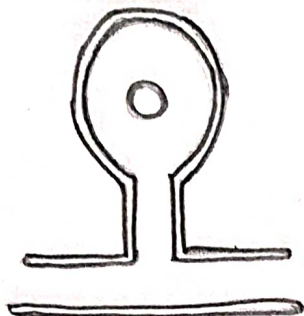
Topic: Sexual Reproduction in albugo

Submitted to,
Department of Botony,
DVS college of Arts
& Science, Shivmoga.

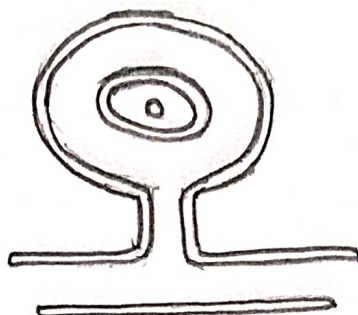
Assignment-5

Sexual Reproduction in albugo

- * Sexual reproduction is Oogamous type.
- * It takes place by Gametangial contact.
- * The male sex organ is called as Antheridium.
- * The female sex organ is called as Oogonium.



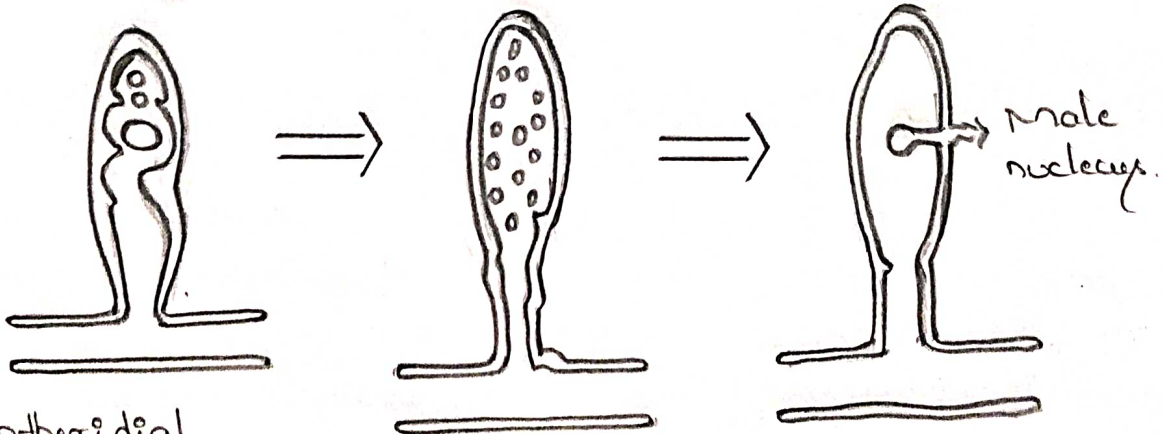
Antheridium



Oogonium.

Antheridium

- * It is developed from a branch of hyphae known as Antheridial Primordia.
- * The Antheridial branch swells to form a multinucleate club shaped structure called Antheridium.



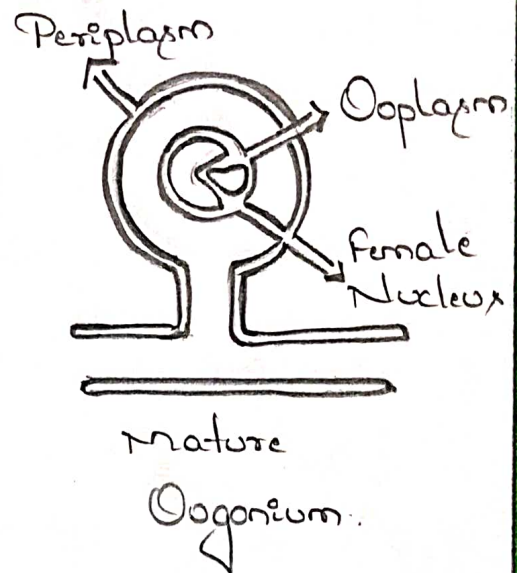
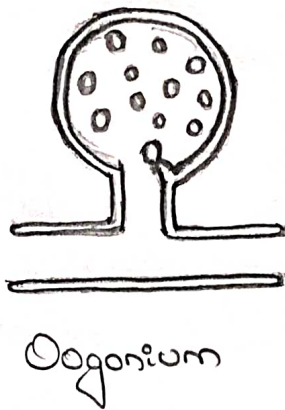
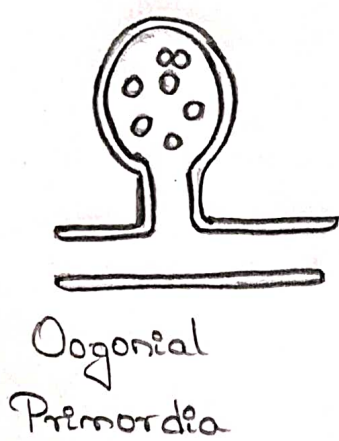
Antheridial Primordia

Antheridium

Male Antheridia

Oogonium

- * It is developed from a branch of the hyphae known as Oogonial primordia.
- * The Oogonial branch bulges to form multinucleate spherical structure called Oogonium.
- * The protoplast of the Oogonium gets differentiated into Outer periplasm.
- * All the nuclei of the Ooplasm except one degenerate.
- * At the time of fertilization only one functional nucleus is present in the Ooplasm, which is called as egg nucleus.

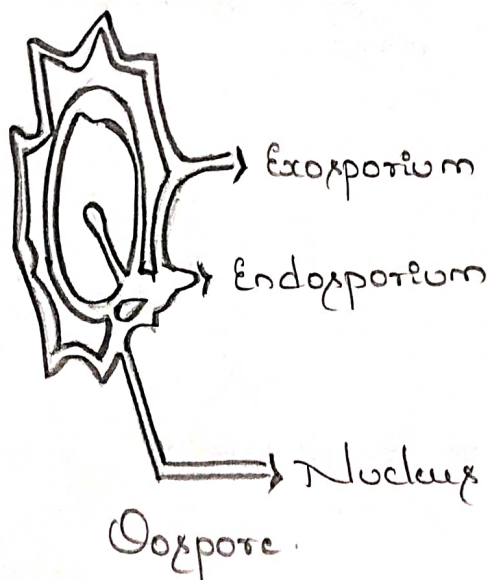
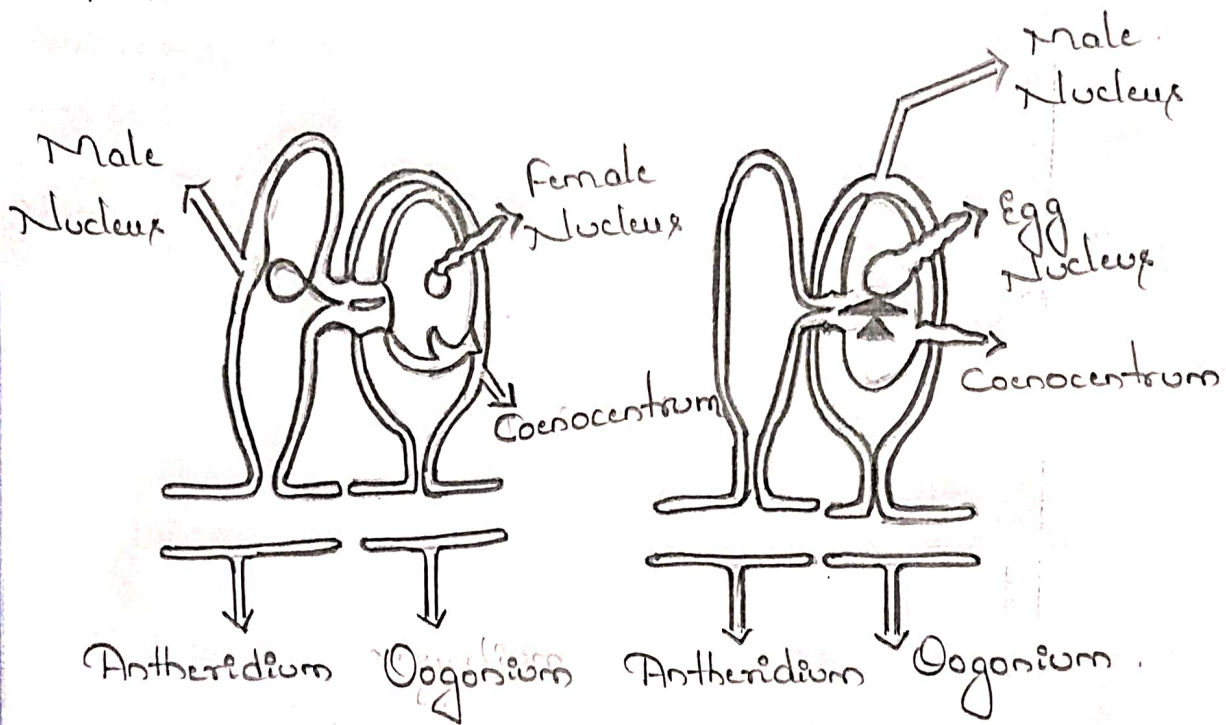


Fertilization

- * At the time of fertilization all the nuclei except one of the antheridium disintegrate.
- * The only nucleus which acts as the functional male nucleus.
- * The antheridium at the region of receptive spot produces a tubular structure called fertilization tube, which carries the male nucleus.
- * The fertilization tube after in the Ooplasm opens to release the male nucleus.

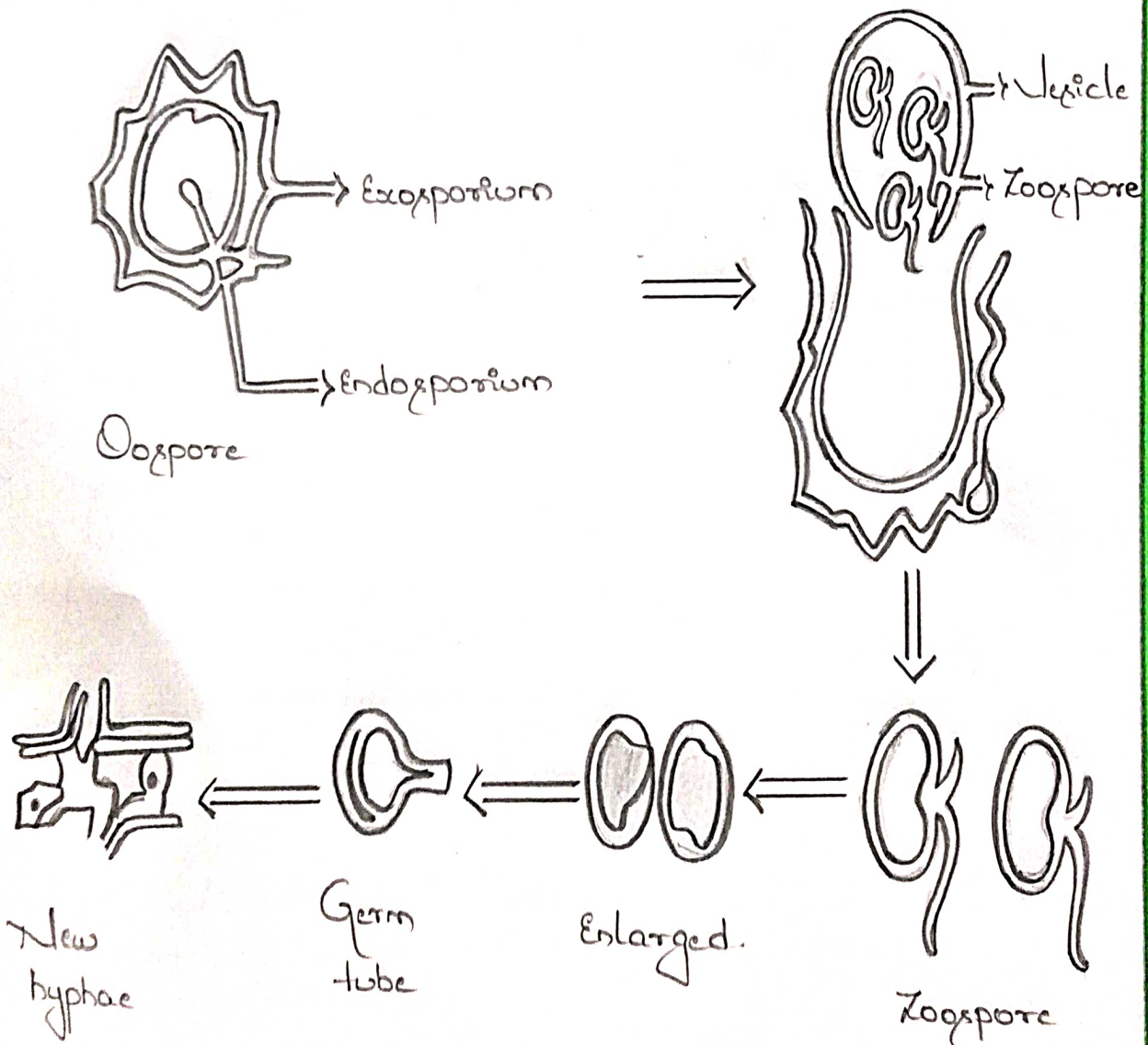
* Prior syngamy a cytoplasmic body appears the Ooplasm which is known as Coenocentrum.

* There will be union between male nucleus and egg nucleus which results in a diploid structure called Oospore.

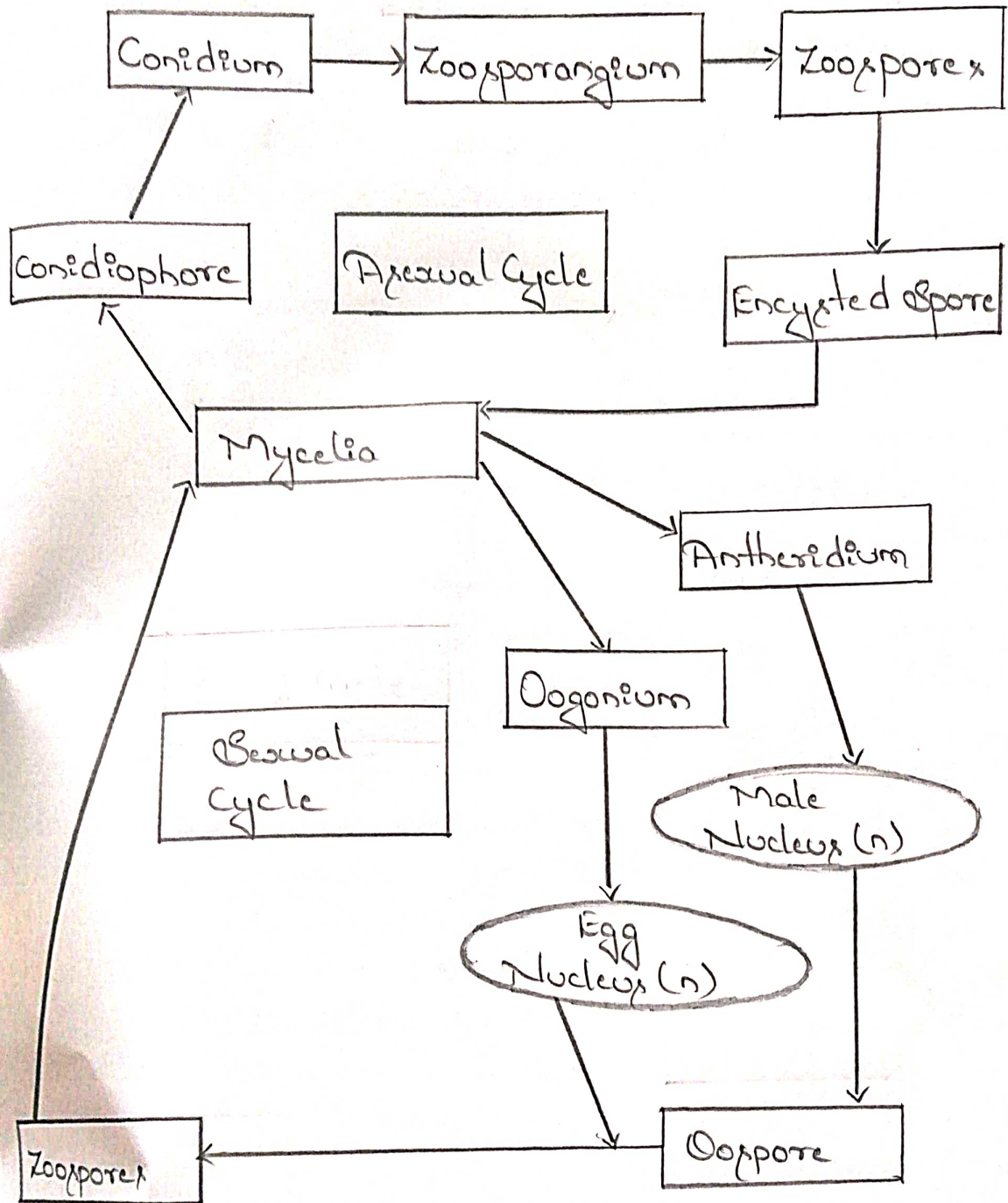


Oospore

- * Oospore is a diploid, spherical, thick wall structure.
- * The wall of the Oospore consists of outer exosporium and inner endosporium.
- * During germination the diploid nucleus undergoes meiosis resulting a number of haploid zoospore. Which are released into vesicle.
- * When the vesicle dissolves zoospore becomes free which lose their flagella and undergo Encysted condition.
- * Each encysted zoospore germinates into a new hyphae.



of Cycle



2020-2021

Name : DEEPIKA.B.K

S.T.D : 1st year BSC

College Name : D.V.S Arts, Commerce
& Science college Shimogga.

Subject : Botany

Topic : Reproduction in Phytocytom
with neat labelled Diagram

Submitted. To

Sheela Mam

D. V. S Arts, Commerce &
Science College, Shimogga.

Reproduction in Phytophthora :-

Phytophthora reproduces by three methods,

- ① Vegetative reproduction
- ② Asexual reproduction
- ③ Sexual reproduction

Vegetative Reproduction :-



Vegetative reproduction occur through chlamydospore formation.

The structures are formed by sum of the segments of the hyphae which become spherical and develop thick wall around it.

During favorable condition each spore develops into new plant body.

Asexual Reproduction :-

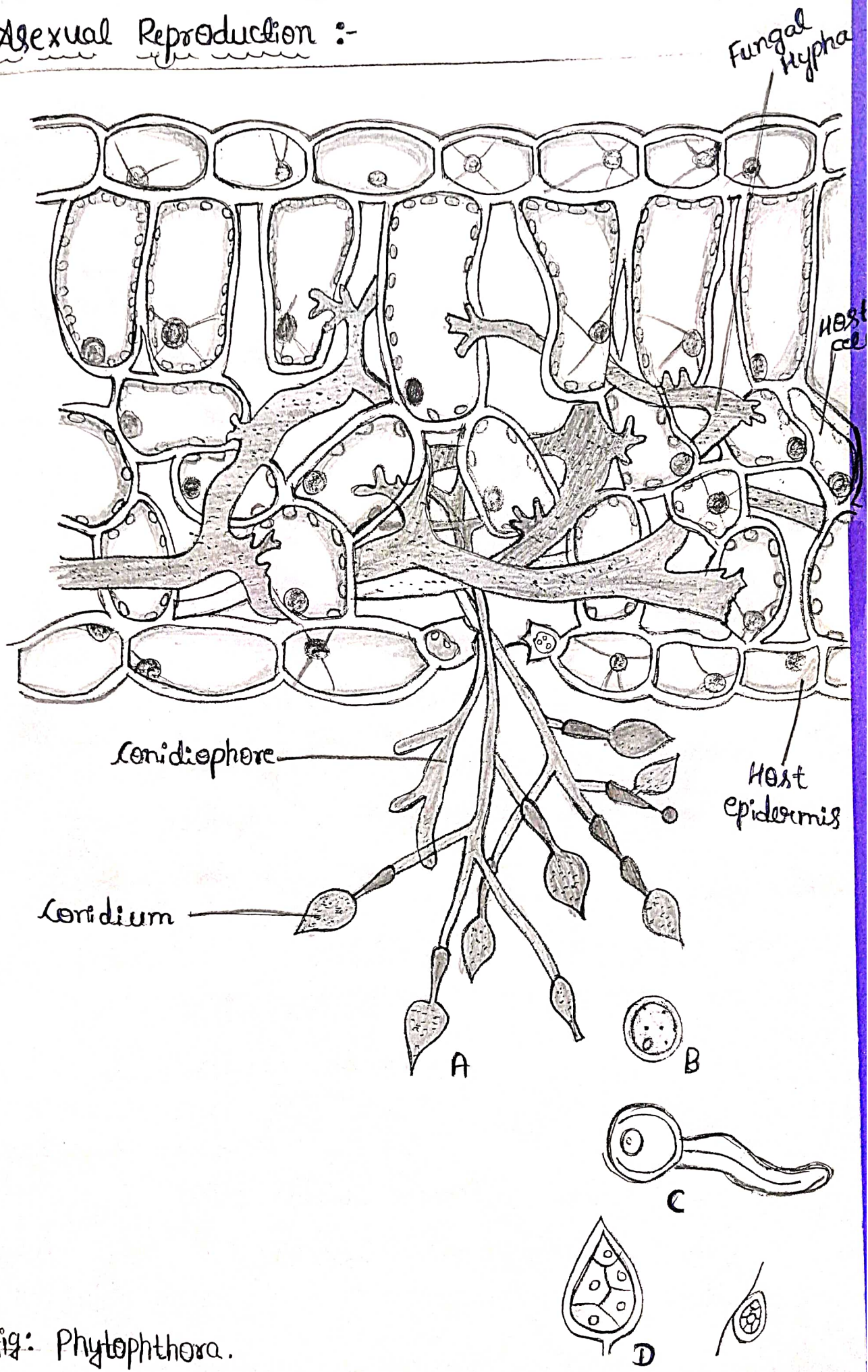


Fig: Phytophthora.

Phylophotheca

A) Fungal hyphae showing conidiophore bearing conidia.

B) Germination of Conidium.

(D. E) Production of zoospore

Phytophythora reproduces asexually by the formation of Sporangia

Sporangia produces on special aerial hyphae called conidiophore or sporangiophores.

During asexual reproduction the intercellular mycellium produces sporangiophores.

Each sporangiophore at its apex produces a sporangium.

Though sporangium formation is terminal. It shifted to lateral side due to the continuous growth of the sporangiophore.

Asexual Reproduction is occur by 2 ways:

1. Direct method
2. Indirect method

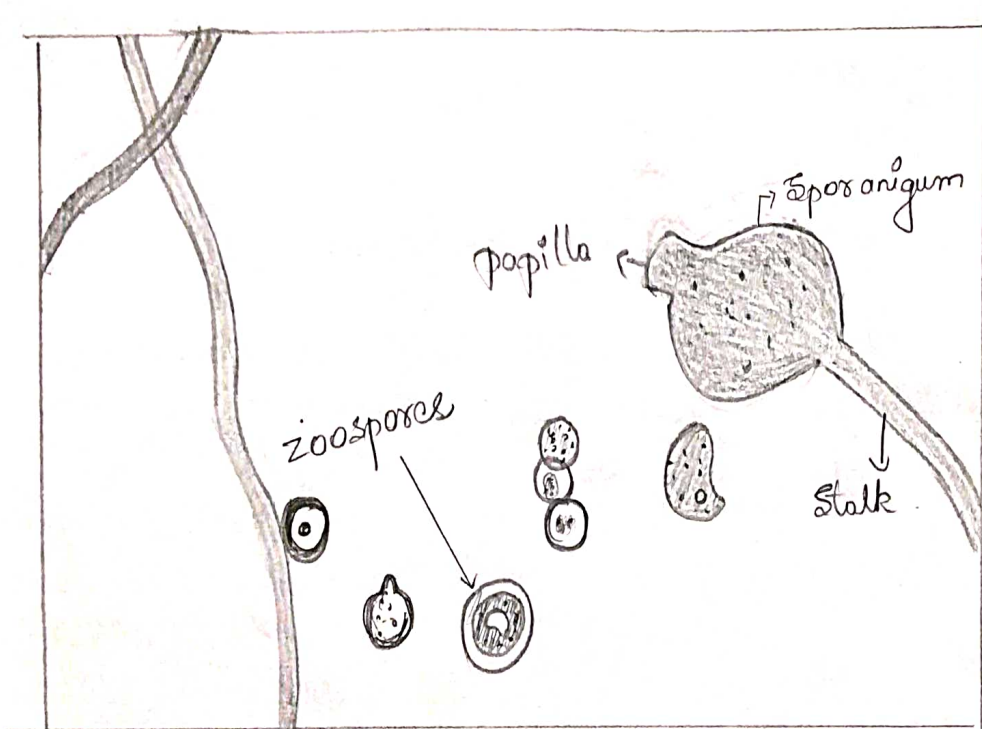
Indirect method:

* It takes place during moist weather and low temperature conditions.

* During indirect germination the protoplast of sporangium undergoes cleavage, resulting a number of uniriculated bit.

Each uninucleated bit metamorphosis into a
zoospores.

The sporangium is a oval (or) lemon
shaped structure. It has a short stalk at
the base, at the apex a beak like projection
is seen known as papilla.



After the formation of the zoospore.

The sporangium opens to release the zoospore.

Each zoospores are biflagellate structure.

* One flagella is short known asinsel type
and the other long known as whiplash type.

* The liberated zoospores swim for a while,
withdraw their flagella and come to rest.

* Resting zoospores is known as Encysted spore.

* Each resting zoospores germinates by a germ

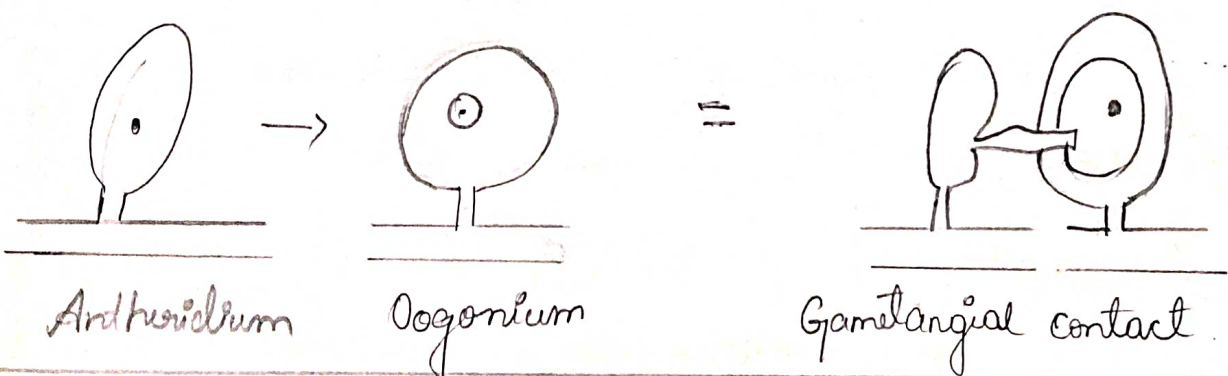
tube which forms a new hypha.

Direct methods :

- * It takes place during Day weather and high temperature condition.
- * This method is similar to Indirect method.
- * But in this method zoospores not attaining resulting stage.
- * It direct develops into New hyphae.

Sexual reproduction :

- * Phytophthora reproduce sexually by the formation of Sex Organ the male Sex Organ is Antheridium and the female Sex Organ is Oogonium.
- * The Sexual reproduction is Oogamous type takes place by Gametangial contact.



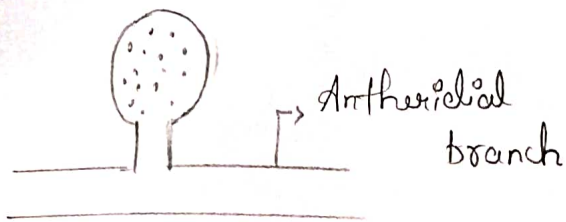
Antheridium :

- * During the formation of antheridium, the hyphae produce a special branch known as Antheridium branch.

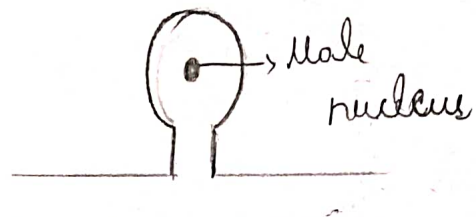
The Antheridium branch enlarges to form a club shape structure.

It is multinuclei in the beginning later all the nuclei except one degenerate.

* The nucleus present is called as functional male nuclei.

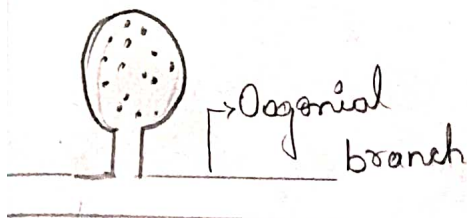


Antheridium

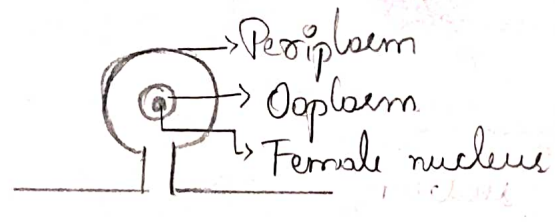


Antheridium

- Oogonium :



Oogonium



Oogonium

It is produced by the female branch known as Oogonial branch.

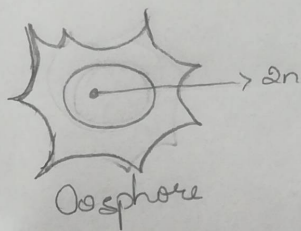
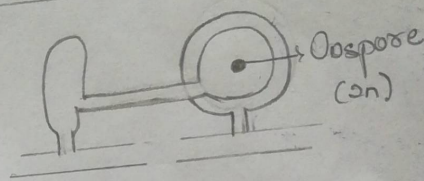
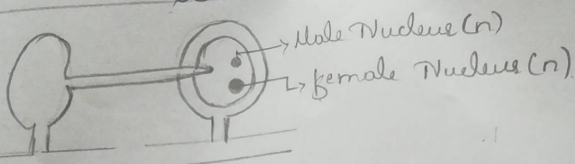
The Oogonial branch enlarges to form a spherical structure known as Oogonium.

Oogonium is multinucleate. The protoplast of the Oogonium gets differentiated into periplasm and Ooplasm.

All the nuclei except one migrate to the periplasm and these nuclei later disappear.

* The nucleus which is present in the Ooplasm is the functional Egg nucleus.

Fertilization



* Prior to fertilization the antheridium produces a short tubular structure known as fertilization tube which carries the male nucleus.

* The fertilization tube enters the Female nucleus where tip of fertilization tube opens and releases male nucleus

* The two nuclei male and female nuclei fuse to form diploid structure called Oospore or zygote. Through the process called Syngamy

* The Oospore enlarges having thick wall around it. Differentiated into Exine and Intine.

Chandana H.G.

III - Bsc.

A - Section.

D.V.S. college of Science, commerce and
Arts.

Assignment: Electroplating - 2016-17

Submitted To: Sahana Taj Maam
[Department of Chemistry].

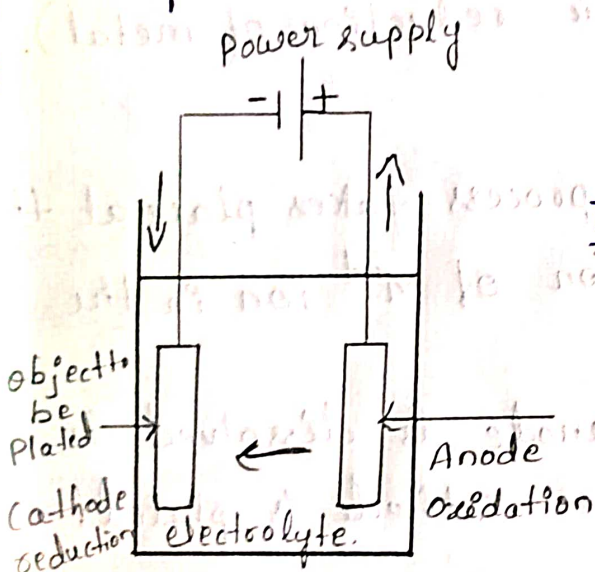
What is Electroplating? Explain with Diagram.

Electroplating is defined as - "The process of deposition of coating metal on the base metal by passing direct current through an electrolytic solution containing the soluble salt of the coating metal"

Ex:- Nickel plating, Gold plating.

Electroplating is one specific type of electrolysis.

Electrolysis is the process in which a direct electric current is passed through an electrolytic cell, chemical reaction takes place at the contacts between the circuit & solution.



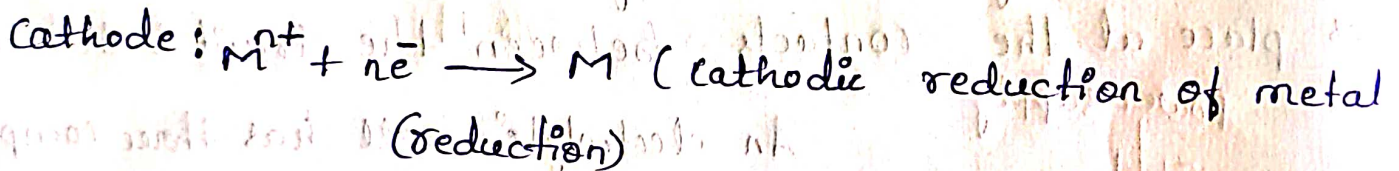
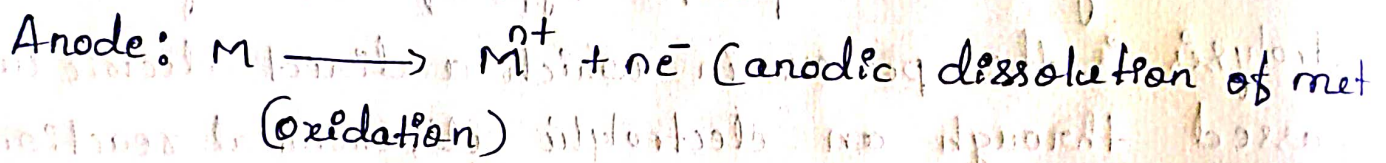
An electrolytic cell has three components:

- 1] Electrolyte: Cell filled with a suitable salt solution of the metal being deposited.
- 2] Anode: - A pure metal rod or plate.
- 3] Cathode: - It is the object being plated

A solution of the desired metal which is to be coated (electrolyte) is taken in the beaker. Two electrodes connecting with the battery are immersed in it. One electrode is the article to be coated which is connected to negative terminal of battery (cathode)

The other electrode is the (anode) pure metal whose coating is to be applied, which is connected to positive terminal of battery. The whole set up is known as electroplating.

Upon electrolysis the anode metal dissolves as M^{n+} the metal ions migrate to the cathode and get deposited there. Thus a thin coating of metal is produced on the article made as cathode.



In ideal situation, both the process takes place at same rate and the concentration of M^{n+} ion in the solution remains a constant.

i.e. the rate at which the anode is dissolved is equal to the rate at which the cathode is plated.

What is the main principle of electroplating?

Electroplating is the surface treatment and finishing of metals or non-metals. An electrochemical reaction is used to form a metallic coating from an aqueous solution or a molten salt. Specifications such as deposition of pure metal or alloy coatings of any composition are met by selecting materials based on deposition rate, deposition efficiency and throwing power.

Explain the steps involved in Electroplating?

Ex:- Gold Electroplating: Gold plating is an easy technique, but before beginning the process the surface of the metal to be plated must be clean.

Surface preparation includes the use of solvents, abrasive materials, alkaline cleaners, acid etching or combinations can be used.

Following cell is used for Gold plating:

Anode: Gold - also, C, stainless steel & nichrome.

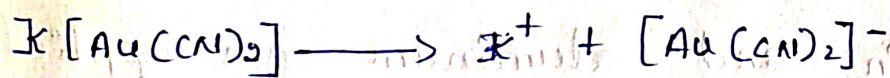
Cathode: - article.

Electrolyte: $K[Au(CN)_2] + Na_3PO_4$ (buffer)

Current density: $1.5 \times 10^{-2} \text{ amp/cm}^2$

Temperature: $60-80^\circ\text{C}$

The direct reduction from the complex is generally considered as the most likely mechanism for the deposition from cyanide complexes. i.e.



In the presence of various addition agents & by using a suitable current density & temperature the colour & shade of deposit alter.

4] What are the factors influencing electroplating?

Factors influencing the nature of good deposit are:

1. Metal-ion concentration

2. pH of the bath

3. Temperature

4. Current-density.

5] Explain the purpose of Electroplating.

There are so many fields in which the process of electroplating is used:

1] Appearance:- One the important purpose of electroplating that, it enhances appearance of the objects i.e. to increase the commercial and decorative value of base metals. Electroplating gives smooth and attractive finish to the crude metal objects.

Ex:- i] Chromium plating on automobiles and kitchen appliances which gives them an up market appeal.

2] Protection:- Protect the metal from environmental and atmospheric conditions such as corrosion.

Ex:- To obtain an improved wear resistance and to impart hardness is required.

Iron is likely to get eroded early, in order to protect it from rusting, coatings of metal such as magnesium, zinc and aluminum are applied

4] What are the factors influencing electroplating?

Factors influencing the nature of good deposit are:

1. Metal-ion concentration
2. pH of the bath
3. Temperature
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Ex:- To obtain an improved wear resistance and to impart hardness is required.

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Special Surface Properties: In incorporating some special surface properties.

Ex:- The machinery parts requiring corrosion resistance under working conditions are plated to avoid wear and also to improve engine performance.

Engineering or mechanical properties:


In providing mechanical properties to the metal requiring corrosion combustion resistance under working conditions.

Ex:- Internal combustion engines used in Aeroplanes.

It serves in providing many mechanical properties to the metals which it lacks such as magnetic properties, resistance, light absorption etc.

Make a list of articles in day to day life, where this technique is used.

- > In Artificial Jewellery.
- > Aesthetics.
- > Protective Barriers
- > Prevent Friction.
- > Increasing thickness
- > Protection from Radiations.
- > Commercial applications.


13/01/2021

D.V.S COLLEGE OF ARTS AND SCIENCES
SHIMOGA

CHEMISTRY ASSIGNMENT

TOPIC : ISOMERISM IN COORDINATION
COMPOUNDS

By :

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III B.SC, 'B' SECTION
S1703820.

ISOMERISM IN CO-ORDINATION COMPOUNDS

Isomerism :

The compounds having same molecular formula but different structures and hence different physical & chemical properties are called 'Isomers'. The phenomenon of the existence of such compounds is known as 'Isomerism'

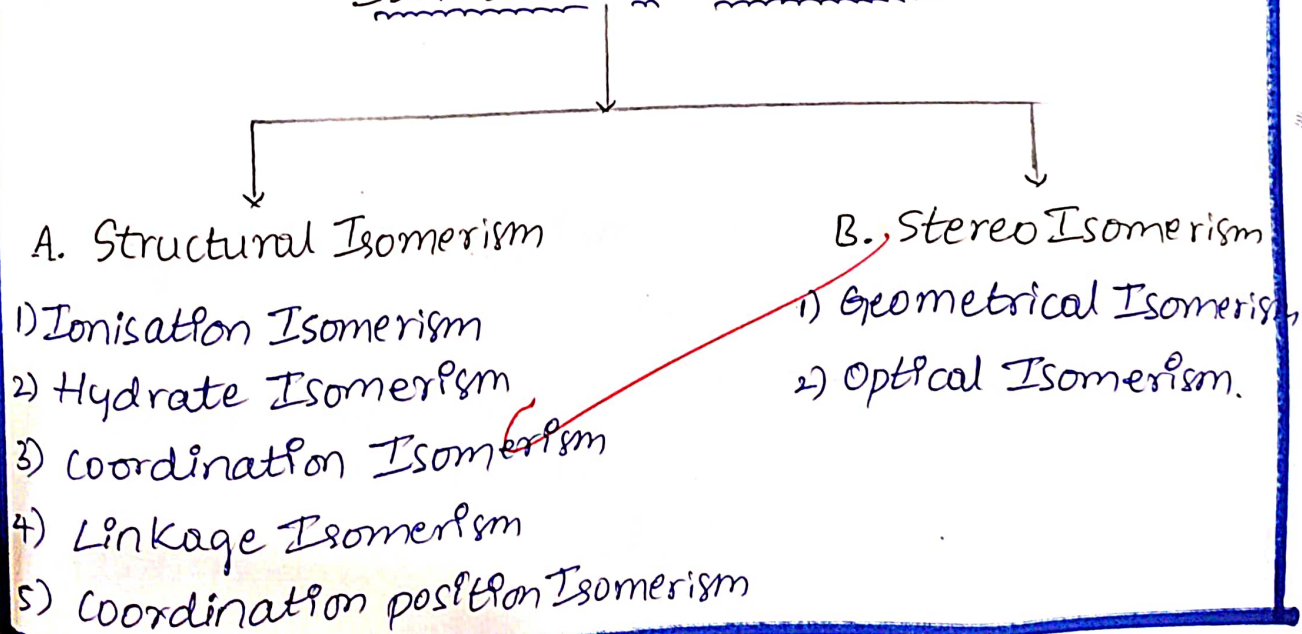
Co-ordination compounds gives rise to a wide variety of Isomers due to the different types of linkages and different arrangements of the constituent atoms.

There are mainly two types :

- i) Structural Isomerism.
- ii) Stereo Isomerism.

These two types are further divided into several types.

Isomerism in Coordination Compounds



A. Structural Isomerism :

1). Ionisation Isomerism :

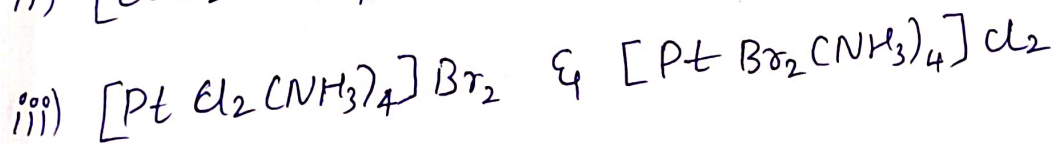
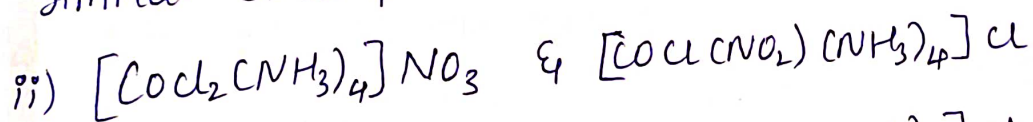
Ionisation Isomerism arises as a result of the exchange of ion inside & outside the coordination sphere.

Example: There are two distinct compounds of the formula $\text{Co}(\text{NH}_3)_5\text{BrSO}_4$. one of them is red-violet and gives precipitate with BaCl_2 , indicating that sulphate ion outside the coordinate sphere.

The second one is red and doesn't give precipitate with BaCl_2 , but gives precipitate with AgBr , which indicate that, now bromide is outside the coordination sphere.

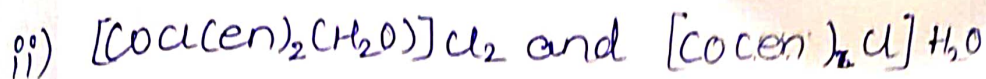
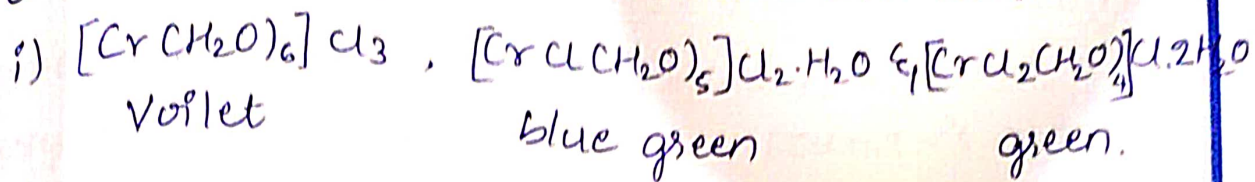


Similar examples :



ii) Hydrate Isomerism : or Solvate Isomerism
Coordination compounds having same molecular formula but differing in the number of water molecules acting as ligands are called hydrate or solvate isomers. This phenomena is called 'Solvate or hydrate Isomerism'.

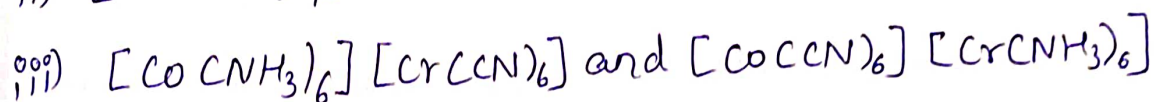
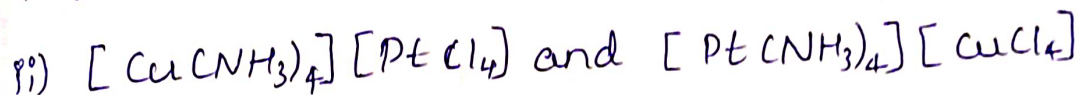
example for hydrate or Solvate Isomerism:



3. Coordination Isomerism :

Coordination Isomerism arises as a result of exchange of ligands between the complex cation & complex anion.

example:



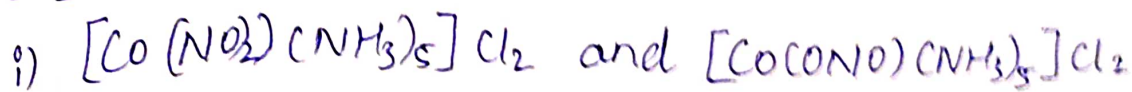
4. Linkage Isomerism :

Coordination compounds having same molecular formula but differing in the mode of attachment of a monodentate ligand to the central metal atom/ion are called 'Linkage Isomer' and this phenomena is called 'Linkage Isomerism'.

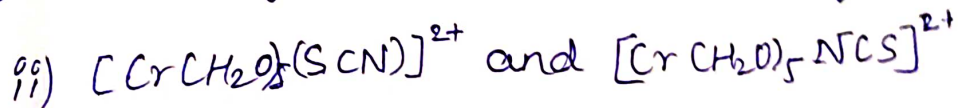
In some ligands, there are two atoms which donate their lone pairs. For example, InNO_2 ion. The nitrogen atom as well as oxygen atom can donate lone pair.

This gives to isomerism. If nitrogen donate its lone pair, particular compound is formed. If oxygen does so, a different compound is obtained.

example:



Other ligands which gives rise to linkage isomerism are CN (cyano) & NCC (isocyanato) & SCN (thiocyanato) & NCS (isothiocyanato)



B. Stereo Isomerism

There are two types in stereo isomerism.

- 1). Geometrical isomerism
- 2). Optical isomerism.

1). Geometrical isomerism :

Geometrical isomerism arises in heteroleptic complex due to different possible arrangement of ligands around the central metal atom/ion.

The ligands occupies positions either adjacent to one another or opposite to one another. They are referred as 'cis' & 'trans' respectively.

If the like groups are adjacent to each other then it is a 'cis' isomer.

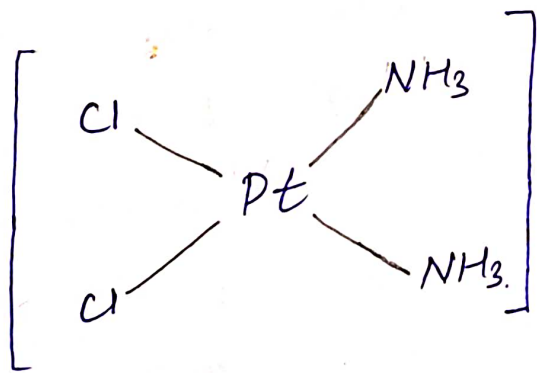
If the like groups are opposite to each other then it is a 'trans' isomer.

'Geometrical isomerism in complexes of coordination number - 4.'

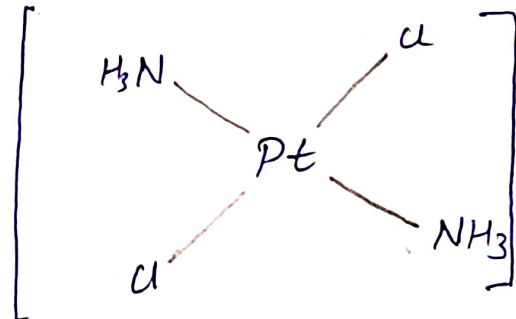
Cis-trans Isomerism is not possible in tetrahedral complexes because all four ligands are adjacent to each other. However, cis-trans isomerism is very common amongst 'square planar' complexes.

a). complexes of type Ma_2b_2 :

example : $[PtCl_2(NH_3)_2]$



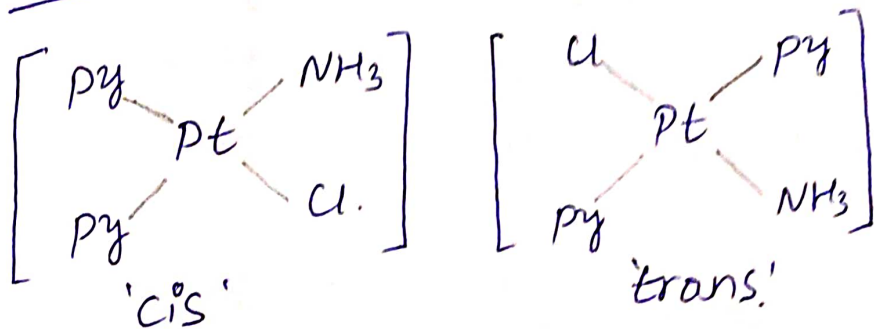
cisplatin



transplatin.

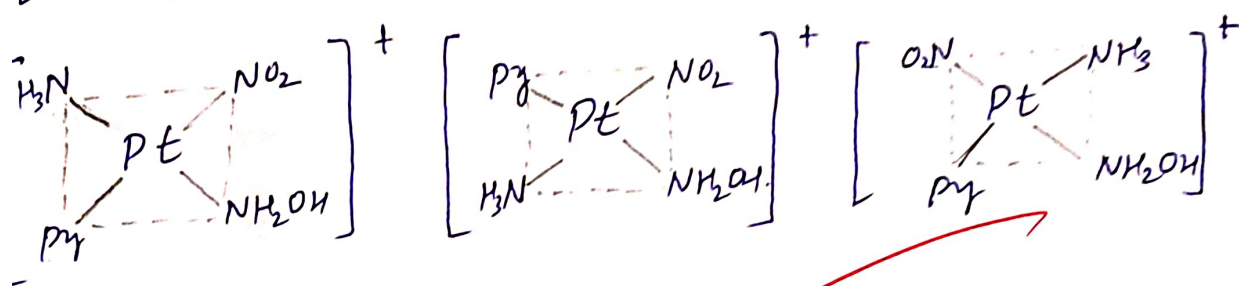
Complex of the type Ma_2bc :

Example: $[Pt(py)_2NH_3Cl]$



∴ complex of the type $Mabcd$:

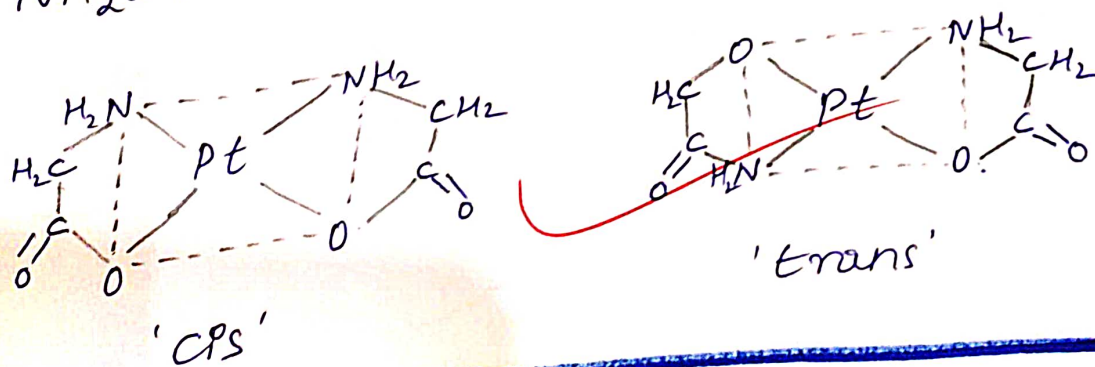
Example: $[Pt(NO)_2(C_5H_5N)(NH_3)(NH_2OH)]^+$



d. Geometrical isomerism cannot occur in complexes of type Ma_4 , Ma_3b or Ma_2b_3 , because all possible spatial arrangements for any of these complexes are equivalent.

e. The square planar complex containing unsymmetrical bidentate ligand $[M(cab)_2]$ also show geometrical isomerism.

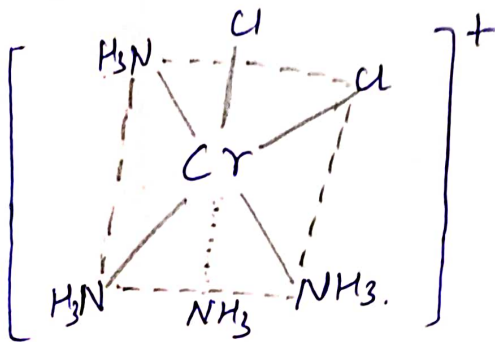
Example: $[Pt(cgly)_2]$ where gly stands for $NH_2CH_2COO^-$ exists in cis & trans form.



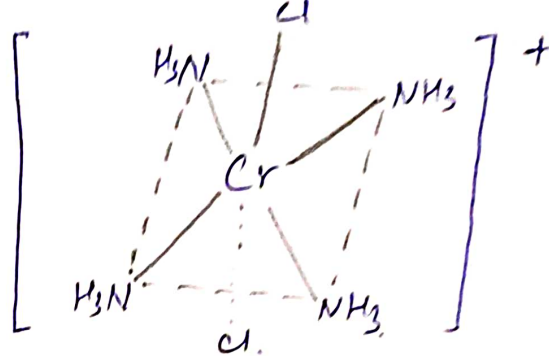
Geometrical Isomerism in complexes of coordination number 6:

The complexes having coordination number 6 adopt 'Octahedral Geometry'. they are also exhibit geometrical isomerism.

a. complexes of the type Ma_4b_2 or Ma_2b_4 or $Ma_2b_2c_2$:



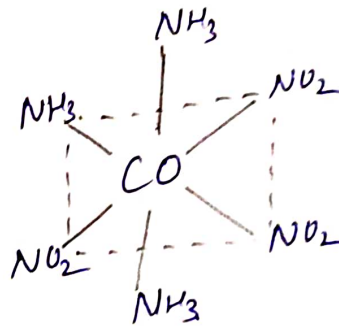
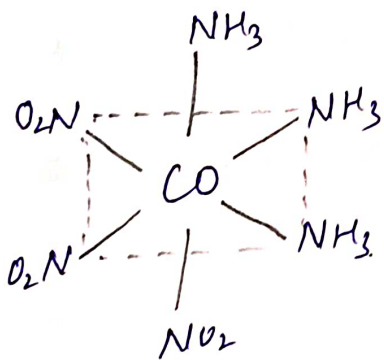
'cis' form



~~'trans' form.~~

b. The complexes of the type Ma_3b_3 type:

example: $[Co(NH_3)_3(NO_2)_3]$



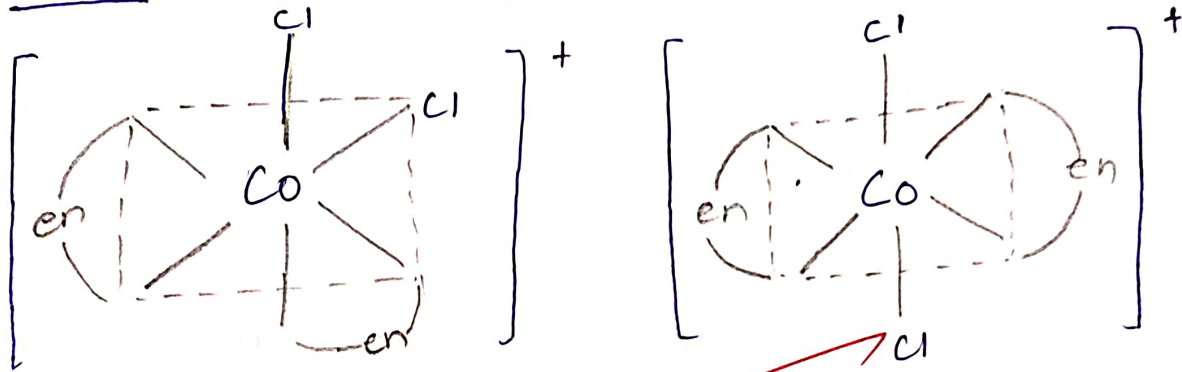
In this type of complexes, If the trio of ligands occupy the adjacent corner of an octahedral face. Then isomer is known as

'facial (fac) isomer'

c. complexes of the type $M(aa)_2b_2$:

These contains bidentate ligands (aa). Show geometrical isomerism.

example: $[CoCl_2(en)_2]^+$



2. Optical Isomerism :

There are certain substances which can rotate plane polarised light. These are called 'optically active' substances.

* Enantiomer :

The optically active isomers of a compound which rotate the plane polarised light equally but in opposite direction. Optical isomers are mirror images but that cannot be superimposed on one other. These are called 'Enantiomers'.

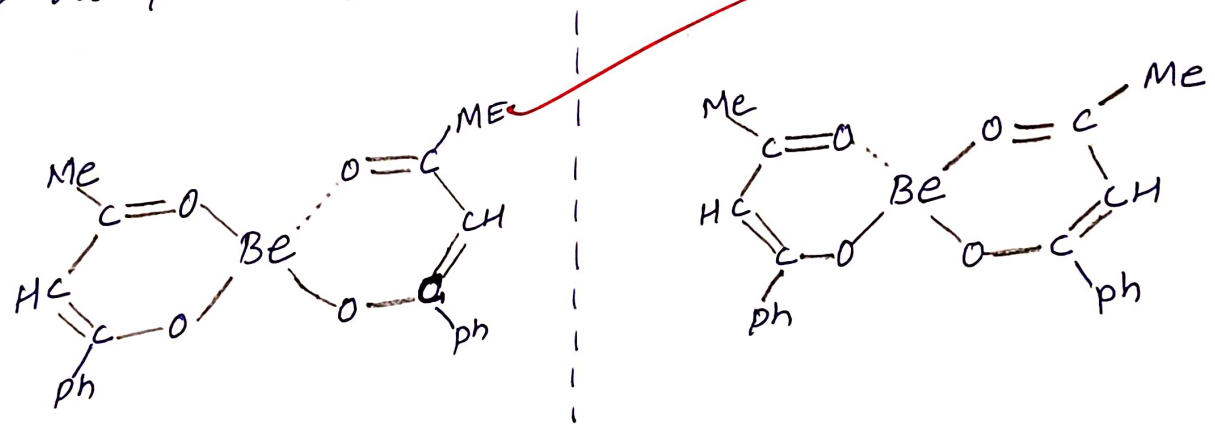
* Chiral :

The molecule/ion that cannot be superimposed are called 'chiral'.

The isomer which rotates the plane polarised light in the clockwise direction is called 'dextrorotatory' designed by (d) or (+). and which rotates plane polarised light in the anticlockwise direction is called 'laevorotatory' designed by (l) or (-).

Optical isomerism in complexes with co. number-4.

Tetrahedral complexes with co. number 4 should exhibit optical isomerism. because there is no plane of symmetry in their molecules.



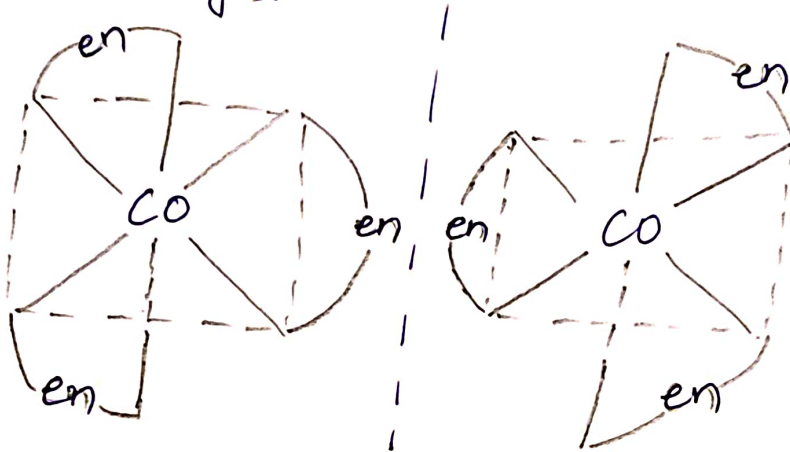
It may be noted that 4 different groups around the central metal atom are not essentially required for optical activity. All required molecule should be 'asymmetric' so that it can exist in two forms which are mirror images of each other. the two structures don't superimpose on each other.

Optical Isomerism in complexes with c.N = 6 :

a). Complex of Type : $[M(aa)_3]$

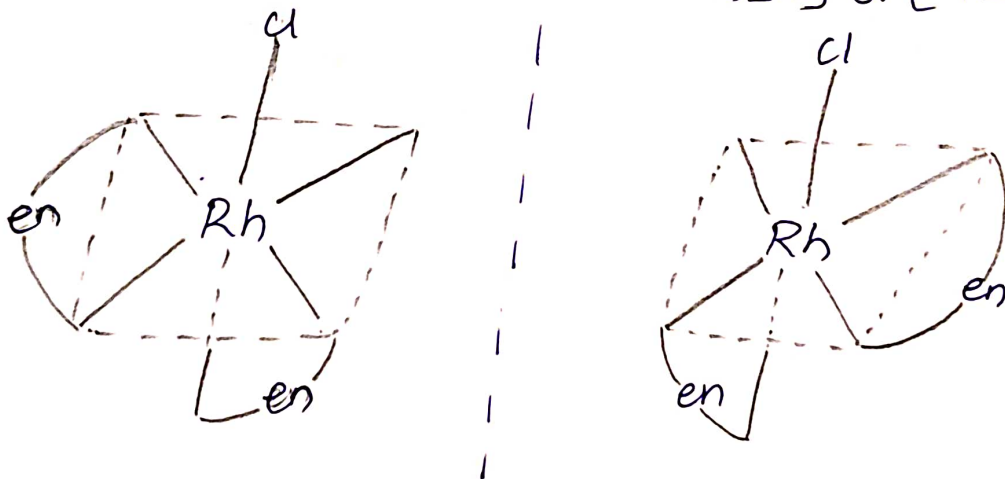
here (a.a) means bidentate ligand.

example: $[Co(en)_3]Cl_3$, $[Cr(ox)_3]^{3-}$ etc. exist as optical isomer. because they are non-superimposable mirror images.



Two optical isomer of complex $[Co(en)_3]^{3+}$.

b). Complex of Type : $[M(aaa)_2b_2]$ or $[M(aaa)_2bc]$



optical isomers of cis $[RhCl_2(en)_2]^+$

c) complexes of the type: $[M(a_2b_2c_2)]$

example: $[CoCl_2(en)(NH_3)_2]^+$ exists in both d & l form

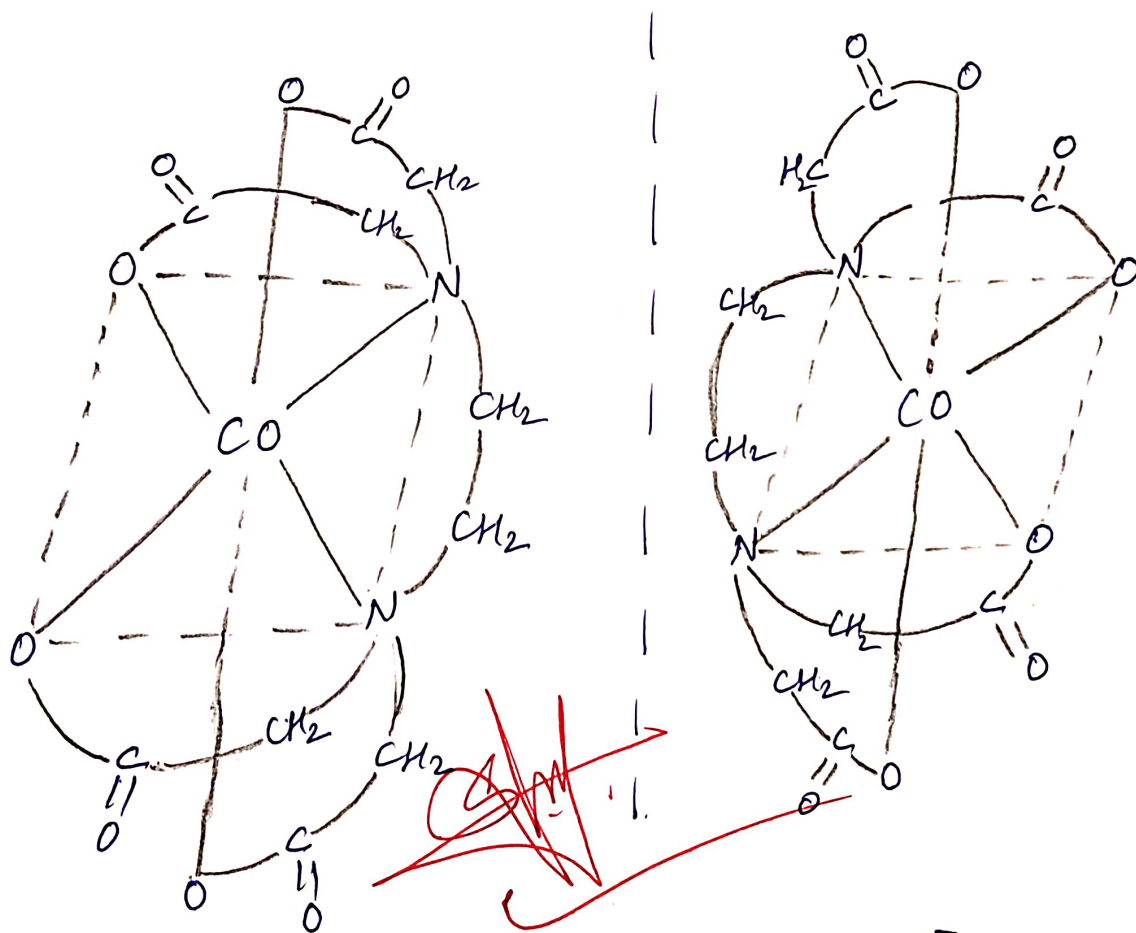
d) complexes of containing unidentate ligands:

$[Mabcdef]$. These complex of type can theoretically 15 geometrical forms. each of them is optically active.

e). Complexes containing hexadentate ligand:

The complex containing hexadentate ligand such as ethylenediaminetetraacetate (EDTA) also show optical activity.

example: $[Co(EDTA)]^-$ exist in 2 forms. they are both d & l. form.



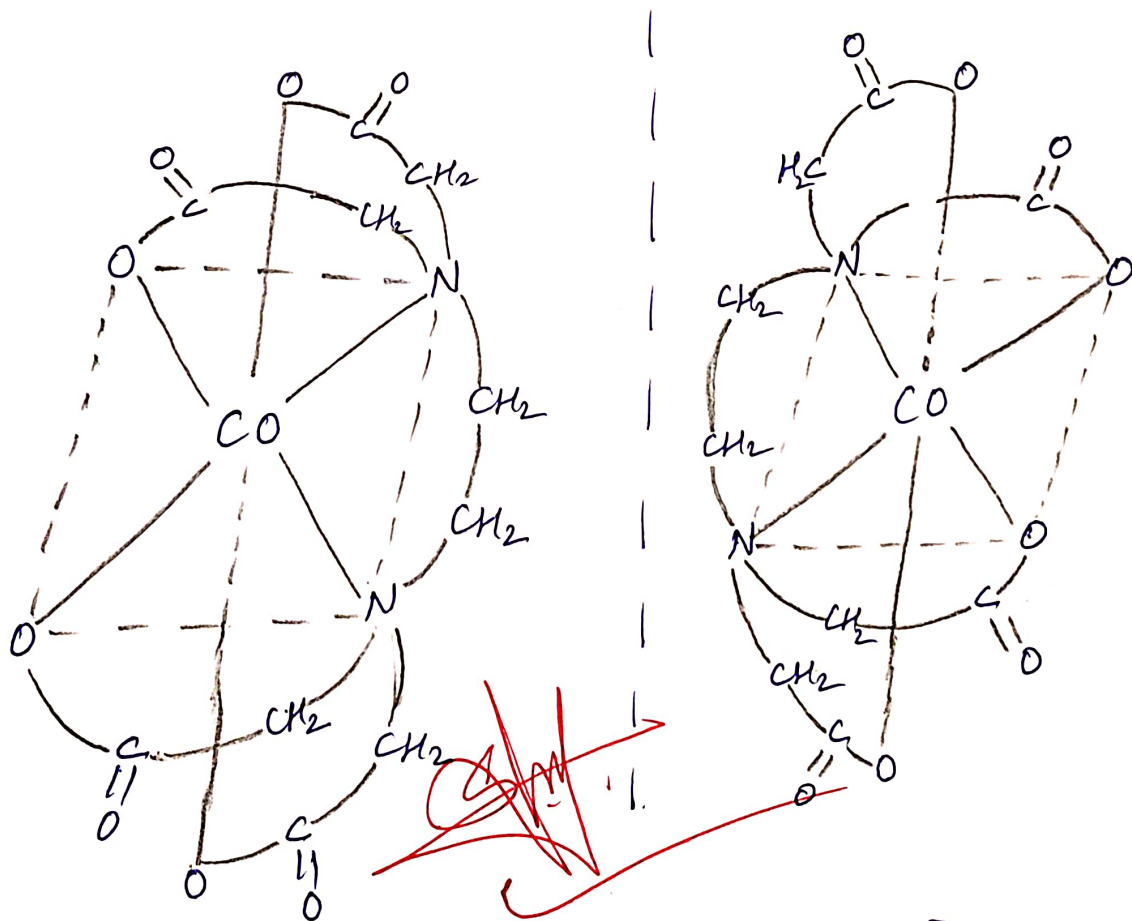
Optical Isomers of $[Co(EDTA)]^-$

c.) Complexes of the type: $[M(a)_2b_2c_2]$
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Optical Isomers of $[Co(EDTA)]^-$

KUVEMPU



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An Assignment Report On

"PHENOLS"

Assignment work Submitted for partial fulfillment of
III semester B.Sc.,

Submitted By;

Name: PANDITH RACHANA R

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Submitted To;

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Department of Chemistry

DVS Arts, Science and Commerce College

Shivamogga

2018-2019

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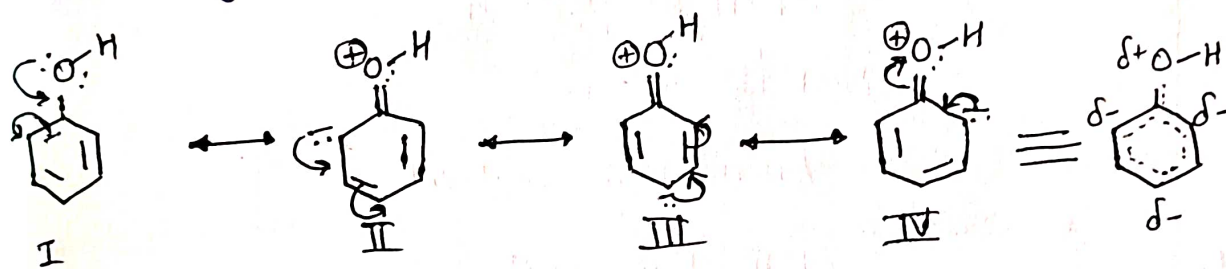
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Introduction

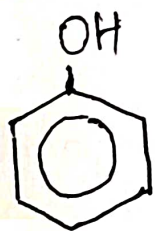
The class name 'phenol' is adopted from the name of the simplest member — the monohydroxybenzene (Greek: phene = benzene and ol = OH).

They are generally occurring in coal tar, wood tar and petroleum distillates. As a class they occupy an important position in the modern synthetic organic chemistry for the preparation of dyes, antioxidants, phenolic resins and certain pharmaceutical products. A number of commercial synthetic processes have been recently developed for the production of phenol to meet its increased requirements.

The electronic structure of phenol can be represented as a resonance hybrid of the following canonical forms



which explains the activation of benzene ring as also the ortho-para directive influence of -OH group on the entering electrophile



Phenol

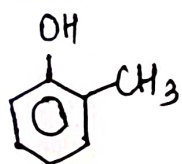
→ OH directly attached to the benzene ring representing a phenol

DEFINITION : Ar-OH, in which the hydroxy group is directly attached to a carbon atom of the aromatic ring.

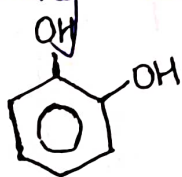
Nomenclature

- (1) Many phenols are known by distinctive trivial names. They have been given common names. For example; the hydroxy derivatives of toluene have been given common name Cresols.
- (2) Phenols are generally named as derivatives of the simplest member phenol. In doing so, the number 1 is assigned to the carbon bearing the OH group.
- (3) When a phenolic moiety is included in a compound that is named by IUPAC system, the hydroxy group is specified as a substituent according to the order of precedence. In such a case a substituent (COOH or CHO) is assigned number '1'.

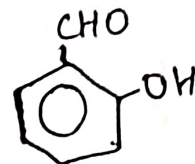
The nomenclature of phenols including systematic and common names is illustrated by the following examples:



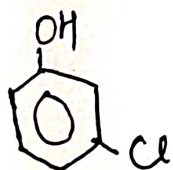
2-methylphenol
1-hydroxy-2-methylbenzene
o-cresol



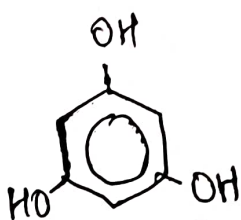
1,2-dihydroxybenzene
catechol



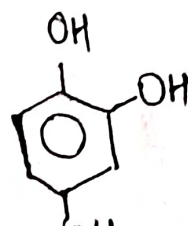
2-hydroxybenzaldehyde



3-chlorophenol
3-chloro-1-hydroxybenzene
m-chlorophenol



1,3,5-trihydroxybenzene
Phloroglucinol



1,2,4-trihydroxybenzene
hydroxyquinone

⊙ The prefixes ortho (o-), meta (m-) and para (p-) are used in place of numbers or positions 2, 3 and 4 respectively when naming monohydric substituted phenols or hydroxytoluenes.

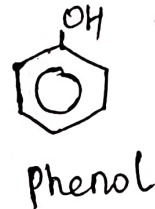
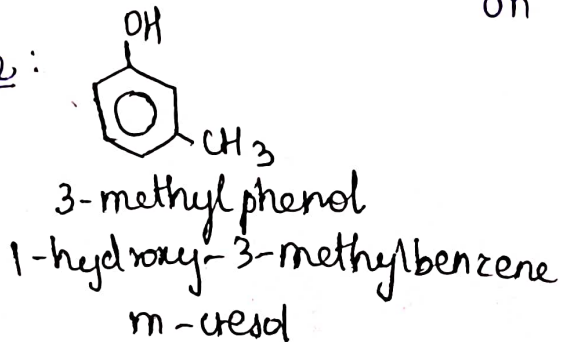
Classification

Phenols are classified into monohydric, dihydric and trihydric phenols according to OH on the number of hydroxy groups present on the benzene ring.

1) MONOHYDRIC PHENOLS:

They contain only one hydroxy group on the benzene ring.

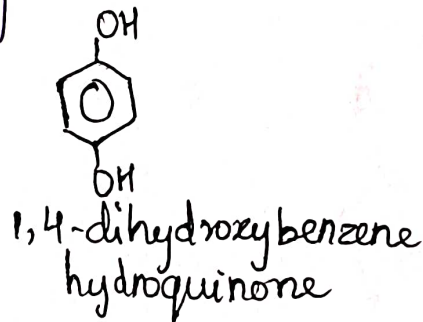
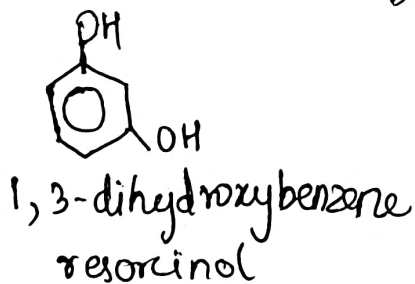
Example:



2) DIHYDRIC PHENOLS:

They contain two hydroxy groups on the benzene ring.

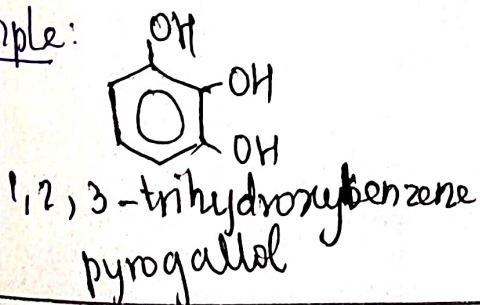
Example:



3) TRIHYDRIC PHENOLS:

They contain three hydroxy groups on the benzene ring.

Example:



Methods of Preparation

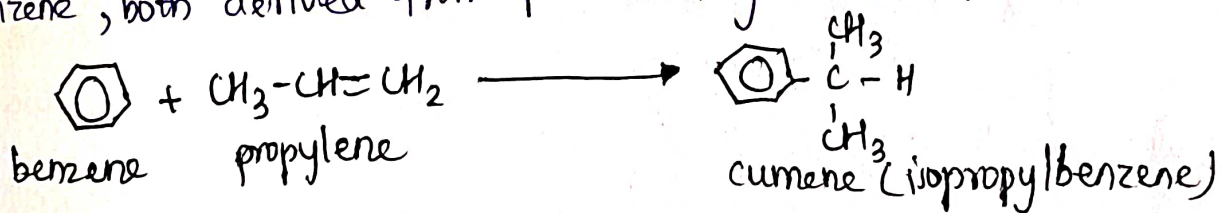
Even though there are several laboratory preparation methods as well as large scale commercial ones, we will discuss 3 major methods of preparation namely;

- (a) From Cumenes
- (b) By Dow's Process
- (c) From Diazonium salts

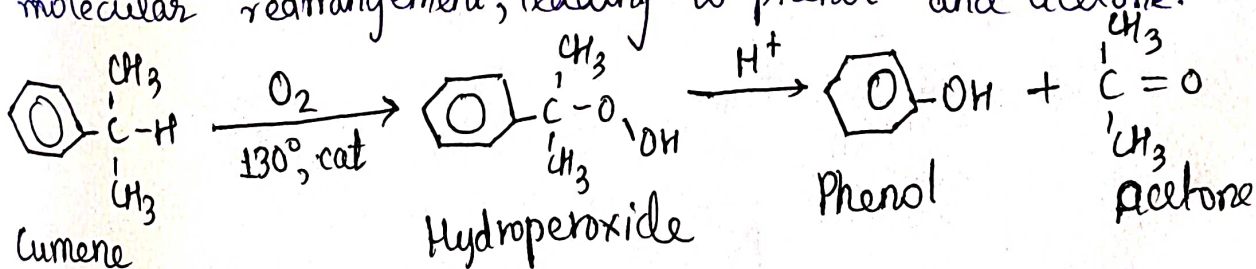
From Cumenes

The most recent commercial synthesis of phenol involves 2 steps:

1) Preparation of isopropylbenzene or cumene from propylene and benzene, both derived from petroleum, by Friedel-Crafts Reaction

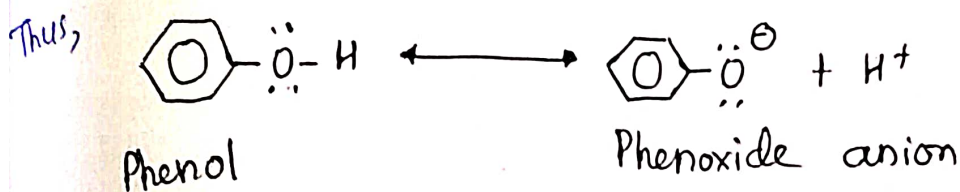


2) Cumene is then oxidised by oxygen at 130°C in the presence of a metal catalyst (or initiator) which yields cumene hydroperoxide. Treatment of the hydroperoxide with dilute sulphuric acid induces a molecular rearrangement, leading to phenol and acetone.



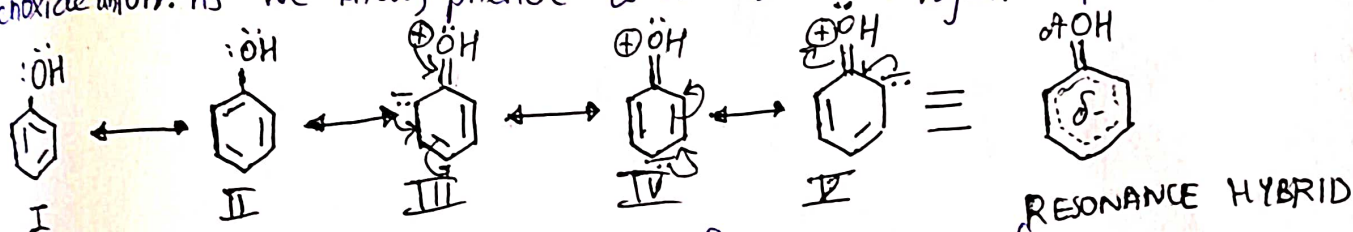
Acidity

The acidity of a compound is defined as its proton-releasing ability in the presence of water. (Lewis base). Phenols behave as weak acids because they ionise when dissolved in water, to form phenoxide anions.

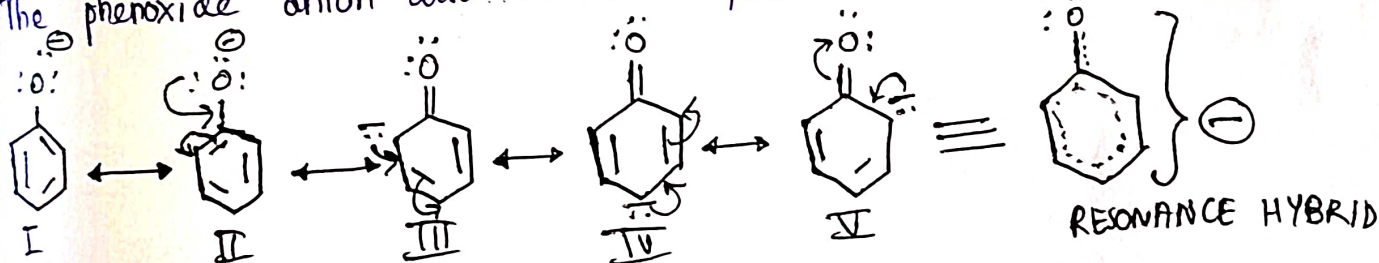


Phenols are markedly more acidic than alcohols, although less so than carboxylic acids. This is evident from the values of K_a given; 1.3×10^{-10} .

The ease with which a phenol gives/releases a proton, is explained by the difference in the resonance stabilisation of the phenol and its phenoxide anion. As we know, phenol is a resonance hybrid of five forms.



The phenoxide anion also occurs in five resonance forms



It may be noted that both phenol and phenoxide^{anion} have 2 Kekule forms. In addition, they have three other charged forms each with the negative charge on the ortho and para position. In phenols, these charged forms (III and V) contribute much less to the hybrid than do Kekule forms (I and II). This is so because charge separation costs energy and high-energy forms cannot stabilise the hybrid much. The resonance forms of the phenoxide ion in which the charge is in the ring, however, acquire no charge separation. The charge is only delocalised. Hence, these forms (III to V) stabilise the phenoxide anion very much. Thus, relatively the resonance hybrid of phenoxide anion is much more stable than the resonance hybrid of phenol itself.



Phenol hybrid

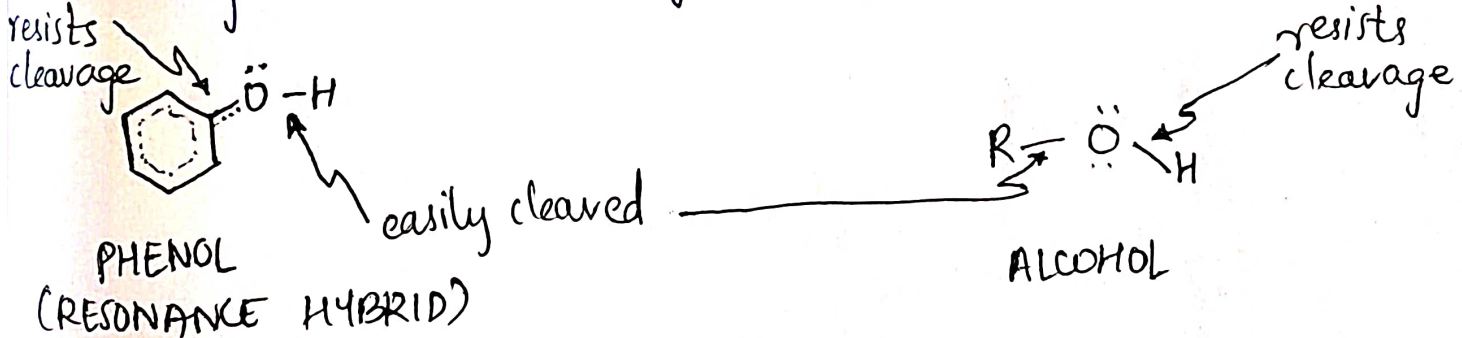
Phenoxide anion hybrid (more stable)

Since phenoxide anion hybrid is more stable than the phenol hybrid, the equilibrium is displaced to the right, releasing H^+ ions. This explains why phenols can behave as acids.

COMPARISON OF ALCOHOL AND PHENOL ACIDITY

Phenols and alcohols are both made of a carbon frame-work carrying a hydroxy group, but they differ significantly in their chemical reactions. This is attributed to the structural difference between the two classes of compounds.

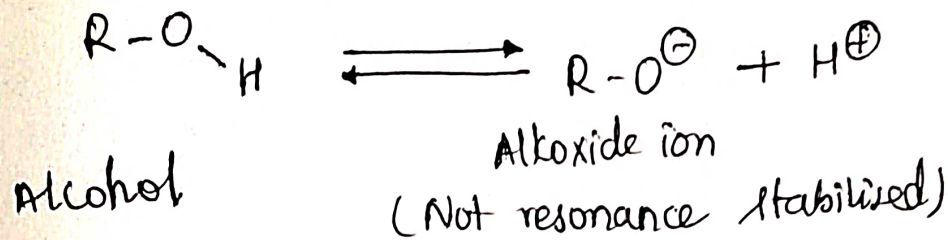
A non-bonded electron pair of oxygen atom of the phenolic OH interacts with the π system of the benzene ring and is delocalised. The delocalised electrons now belong to all the six carbons of the ring as also to the oxygen atom. This delocalisation of non-bonded electrons caused by resonance is represented by the hybrid structure of phenol given below. As a result of delocalisation of electrons as shown below, the C-O bond acquires some double bond character and becomes stronger than O-H bond σ . Also, the increased electron density in the benzene ring activates it, and gives electrophilic substitution reactions.



In alcohols, no resonance is obviously possible and the non-bonded pairs of electrons remain localised on the oxygen atom. The C-O linkage thus retains its σ bond character and is weak as compared to that in phenols.

Thus, while alcohols give reactions in which OH group is replaced by other substituents (C-O cleavage), phenols do not do so normally. On the other hand, phenols are dissociated at the O-H bond and behave as weak acids, forming salts with alkalis. Alcohols do not form salts with alkalis.

Alcohols are 'neutral' in the sense that their acidity is ($K_a \approx 10^{-18}$) no more than that of water ($K_w = 10^{-14}$). This is understandable because the formation of alkoxide anion is not favoured as it is not resonance stabilised.



Considering from another viewpoint, ionisation of both phenol and alcohol requires energy. But the ionisation of phenol would require smaller energy (ΔE_2) owing to the resonance stabilisation of phenoxide anion, than the ionisation of alcohols (ΔE_1) as the alkoxy anion is not resonance stabilised. That is why the ionisation of phenol is favoured greatly as compared to that of alcohols. Or, phenol is much more acidic than alcohols.

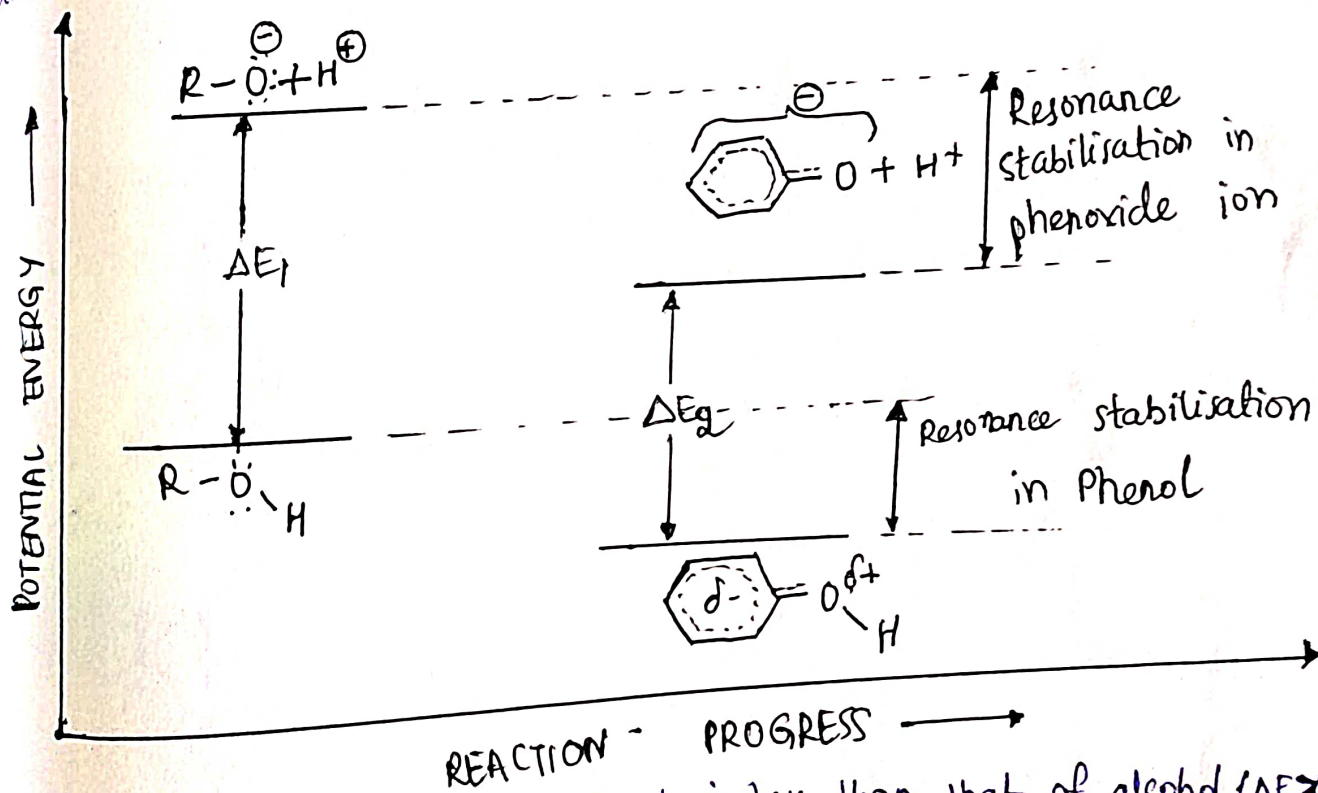
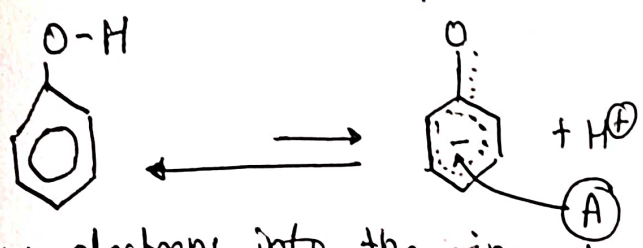


FIGURE: Ionisation energy of phenol is less than that of alcohol ($\Delta E_2 < \Delta E_1$) due to resonance stabilisation in phenol and phenoxide, favouring the former reaction.

EFFECT OF SUBSTITUENTS ON ACIDITY OF PHENOLS:

(A) ELECTRON DONATING GROUPS:

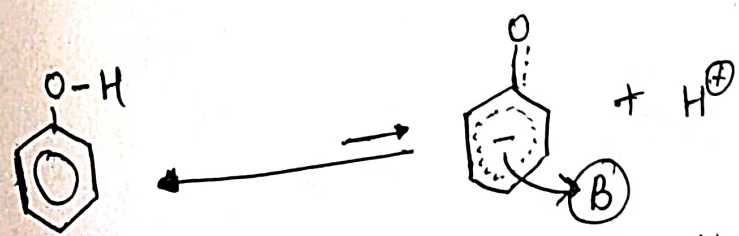
$-CH_3$, $-OCH_3$, $-NH_2$ are some electron donating/releasing groups. An electron releasing substituent 'A' (say $-CH_3$) pumps electrons into the benzene system and intensifies the negative charge of the phenoxide anion. This makes the anion less stable, thereby decreasing the acidity of the phenol.



'A' pumps electrons into the ring, strengthens the negative charge on phenoxide anion and destabilises it, decreasing acidity of phenol.

(B) ELECTRON WITHDRAWING GROUPS:

$-NO_2$, $-Cl$, $-CN$, $-CHO$, $-COOH$ etc are some electron withdrawing groups. An electron withdrawing substituent 'B' (X , NO_2 , CHO , $COOH$) withdraws electrons from the ring system which results in the dispersal of the negative charge of the phenoxide anion. This stabilises the phenoxide anion and therefore, the acidity of the phenol is increased.

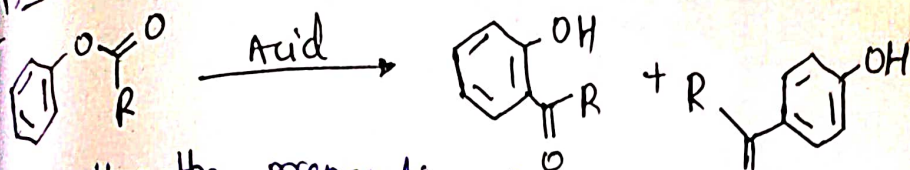


'B' withdraws electrons from the ring, thereby decreasing the negative charge of phenoxide anion and stabilising it, which enhances the acidity of phenol.

This also explains why methylbenzenes are less acidic than phenol, while chlorophenols are more acidic than phenol.

Reactions

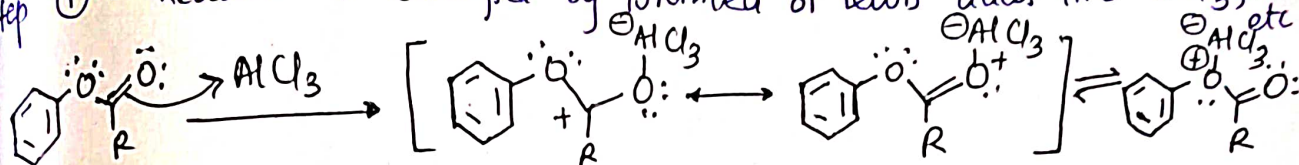
1) FRIES REARRANGEMENT REACTION:



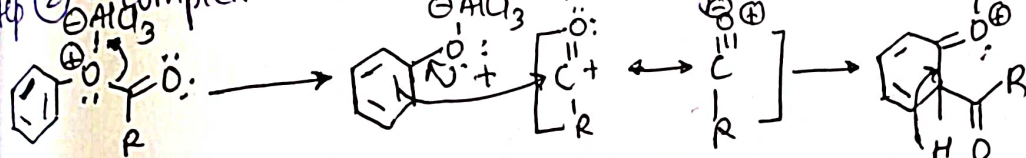
It enables the preparation of acyl phenols.

MECHANISM:

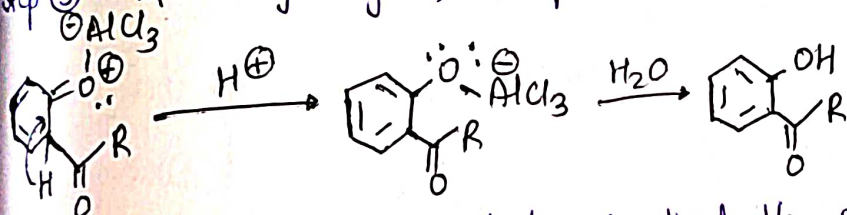
Step ①: Reaction is catalysed by Bronsted or Lewis acids like AlCl_3 , HF



Step ②: Complex dissociates to form acylium ion AlCl_3^-

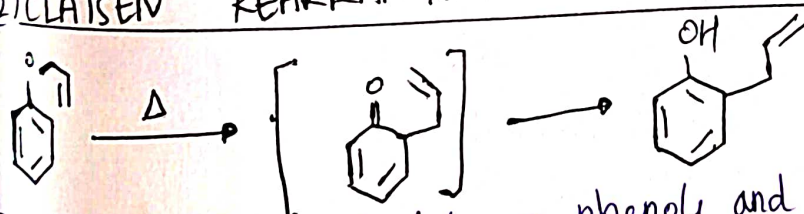


Step ③: After hydrolysis, the product is liberated

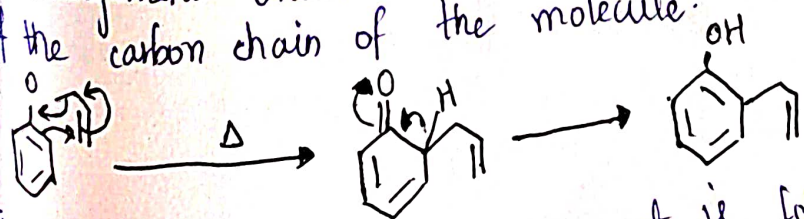


Reaction is ortho-, para-selective so that the site of acylation can be regulated by choice of temperature.

2) CLAISEN REARRANGEMENT REACTION:

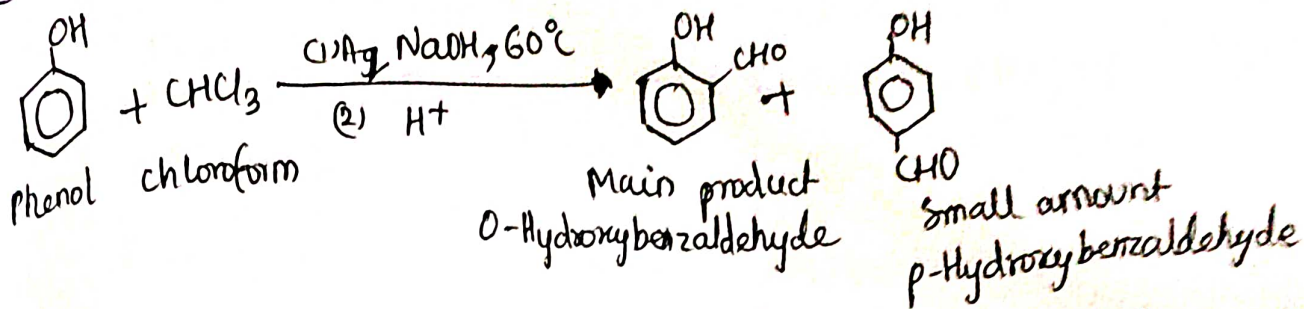


The etherification of alcohols or phenols and their subsequent Claisen rearrangement under thermal conditions makes possible an extension of the carbon chain of the molecule.



The aromatic Claisen rearrangement is followed by rearomatization.

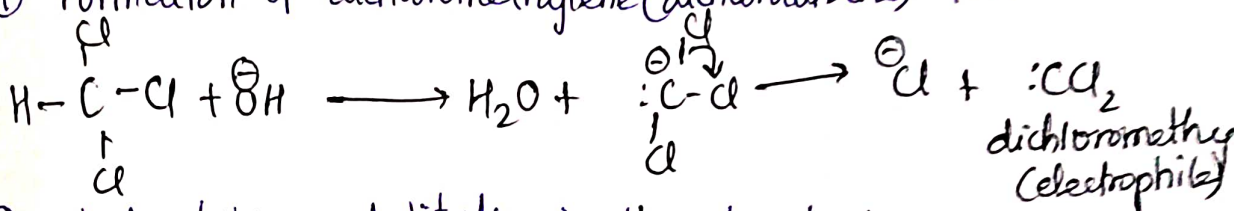
3) REIMER TIEHMANN REACTION:



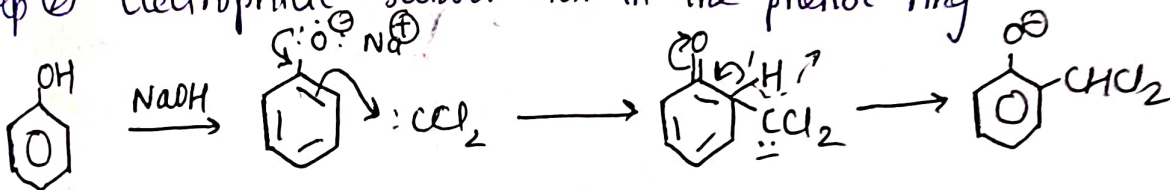
The treatment of a phenol with chloroform (CHCl_3) and aqueous NaOH at 60°C , followed by acidification, introduces a $-\text{CHO}$ group in the aromatic ring mainly in the ortho position to OH group.

MECHANISM:

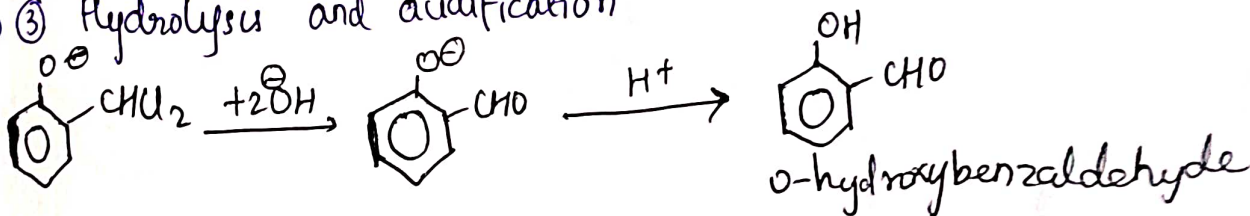
Step ① Formation of dichloromethylene (dichlorocarbene) from chloroform



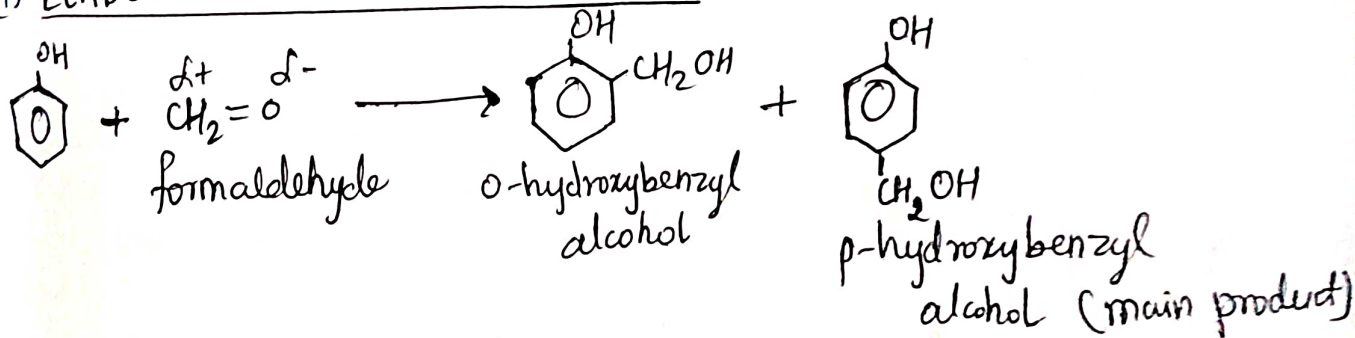
Step ② Electrophilic substitution in the phenol ring



Step ③ Hydrolysis and acidification



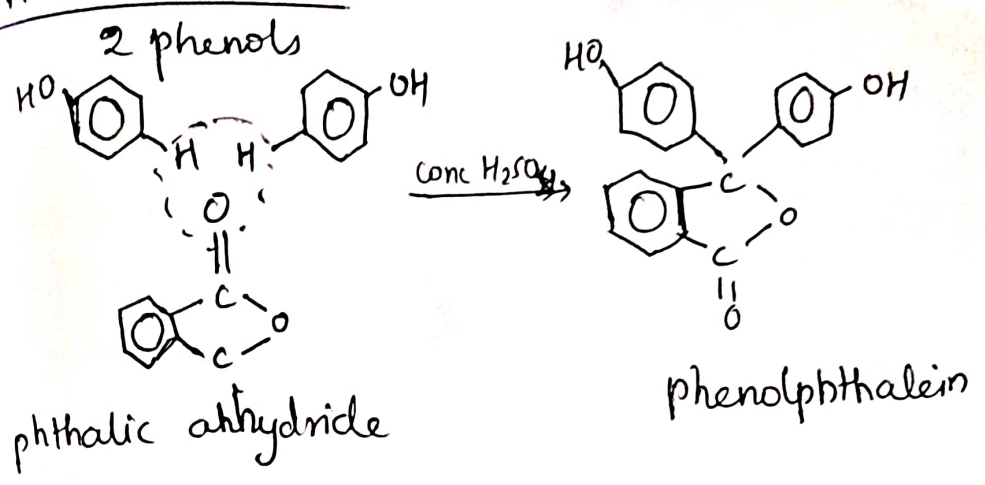
4) LEADER-MANASE REACTION:



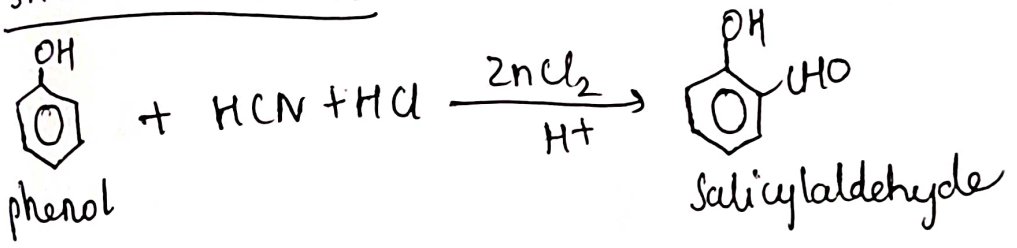
Phenols undergo condensation with aldehydes by electrophilic substitution in ortho and para positions in presence of acids or alkalis as catalyst.

Synthesis

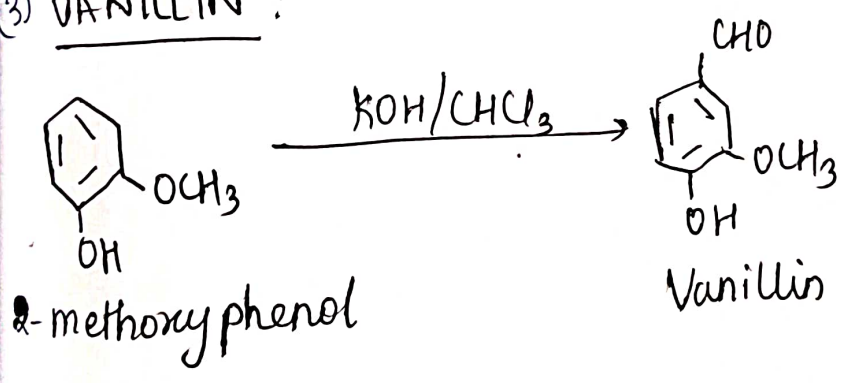
1) PHENOLPHTHALEIN :



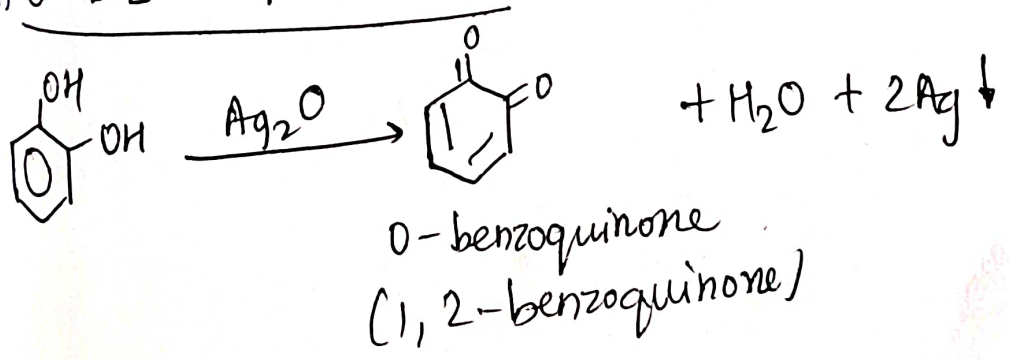
2) SALICYLALDEHYDE :



3) VANILLIN :



4) O-BENZOQUINONE :



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1. www.wikipedia.com
2. www.organic-chemistry.org
3. www.name-reaction.com
4. www.chemhelper.com
5. www.sciencedirect.com

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2. R.K. Bansal, Organic Reaction Mechanism, Wiley Eastern Limited, New Delhi, 1993
3. S.K. Ghosh, Advanced General Organic Chemistry, Book and Allied (P) Ltd, 1998

KUVEMPU



UNIVERSITY

**DVS Arts, Science and Commerce College
Shivamogga**

An Assignment Report On

“CATALYSIS”

**Assignment work Submitted for partial fulfillment of
III semester B.Sc.,**

Submitted By;

Name: YASMEEN TAJ

Reg.No: S1803512

Submitted To;

Dr. Chethan M Kuskur

Department of Chemistry

DVS Arts, Science and Commerce College

Shivamogga

2019-20

CATALYSIS

Introduction : \rightarrow

The term catalysis is introduced by J.J. Berzelius (1835) to describe the influence of a foreign substance on the rate of reaction. The foreign substance was called a catalyst. A catalyst influences the rate of a reaction, itself remaining chemically and quantitatively unchanged. It can accelerate or retard the reaction. The term catalyst is used generally to express acceleration. According to Ostwald (1895), a catalyst is defined as a substance that changes the reaction rates without affecting the overall energetics of the reaction.

Definition : \rightarrow

A catalyst is defined as a substance which alters the rate of a chemical reaction, itself remaining chemically unchanged at the end of the reaction. This process is called catalysis.

Types of Catalysis : \rightarrow

They are classified as.

1. Homogeneous catalysis
2. Heterogeneous catalysis.

1. Homogeneous catalysis : \rightarrow

All such process, in which the catalyst, the reactants and the products are in the same phase are termed as homogeneous catalysis.

CATALYSIS

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Types of Catalysts : \rightsquigarrow

They are classified as.

1. Homogeneous catalysis
2. Heterogeneous catalysis.

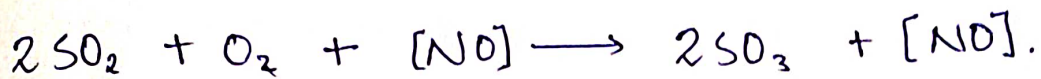
1. Homogeneous catalysis : \rightsquigarrow

All such process, in which the catalyst, the reactants and the products are in the same phase are termed as homogeneous catalysis.

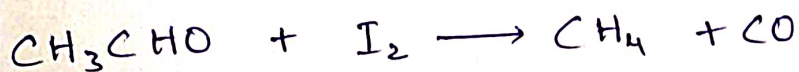
This type of catalysis can occur in gas phase or the liquid phase.

Examples of Homogeneous catalysis in gas phase.

(i) Oxidation of sulphur dioxide to sulphur trioxide with nitric oxide as catalyst.

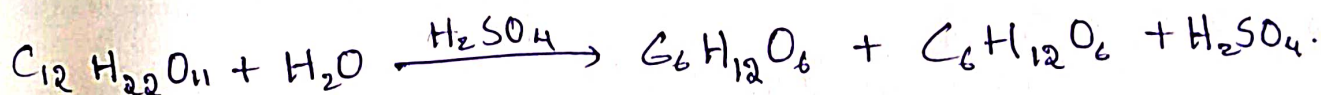


(ii) Decomposition of acetaldehyde with iodine as catalyst.

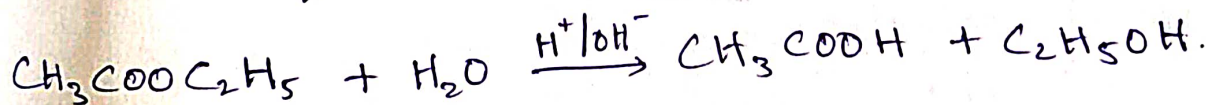


Examples of Homogeneous catalysis in liquid phase.

(i) Hydrolysis of cane sugar in aqueous solution in the presence of mineral acid as catalyst.



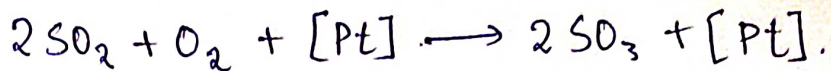
(ii) Hydrolysis of an ester in the presence of acid or alkali



Heterogeneous Catalysis : \rightarrow

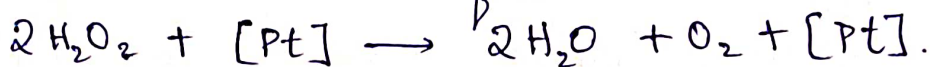
Heterogeneous catalysis is the type of catalysis where the phase of the catalyst differs from the phase of the reactants. The catalyst employed in all cases is a solid and reactants are either gases or liquid.

Example of Heterogeneous catalysis with reactants in gas phase. is combination of sulphur dioxide and oxygen in the presence of finely divided platinum or Vanadium pentoxide.



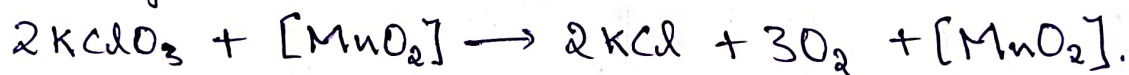
Example of Heterogeneous catalysis with reactants in liquid

i) The decomposition of aqueous solutions of hydrogen peroxide is catalysed by manganese dioxide or platinum in colloidal form.



Example of Heterogeneous catalysis with reactants in solid phase.

i) The decomposition of potassium chlorate is catalysed by manganese dioxide.



Characteristics of catalytic reactions:

- (i) The catalyst remains unchanged in quantity and in its chemical nature at the end of the reaction.
- (ii) Only a little amount of a catalyst is sufficient to bring about a considerable extent of reaction.
- (iii) The catalyst cannot affect the position of equilibrium in a reversible reaction. Since the catalyst remains unchanged in a chemical reaction it contributes no energy to the system.
- (iv) The catalyst and the reaction initiation. For a reaction to occur, the final state should have lower free energy than the initial state, and since a catalyst does not contribute to the total energy of the system, a catalyst will not be able to start a reaction.

(v) Action of a catalyst on a chemical reaction is specific, therefore, the mechanism and the nature of the products depend to a large extent on the nature of the catalyst.

(vi) The temperature effects on the reaction rates remain unaltered even in the presence of a catalyst.

Theories of catalyst : \rightarrow

There are 2 main theories of catalytic reactions.

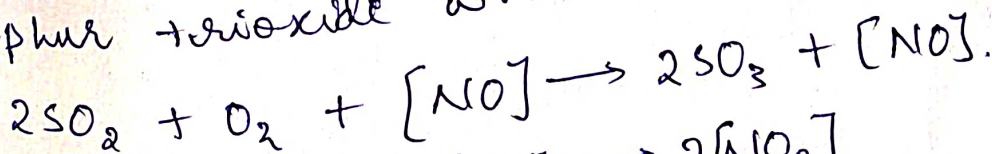
1. Intermediate compound formation theory
2. Adsorption theory for heterogeneous catalysts.

1. Intermediate compound formation theory : \rightarrow

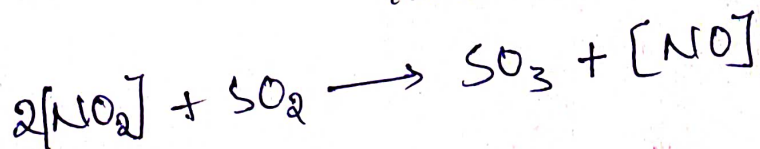
According to this theory, the reaction is brought about by a path involving an intermediate formed from the catalyst and one of the reactants. This intermediate compound is highly reactive and reacts with the other reactants, or is unstable and decomposes to yield the products and releasing the catalyst.

For a reaction, $A + B \xrightarrow{X} AB$ (X is catalyst)
The reaction is supposed to take place through the reactions,
 $A + X \rightarrow AX$ [intermediate is highly reactive],
 $AX + B \rightarrow AB + X$.

Example: Catalytic oxidation of sulphur dioxide to sulphur trioxide with nitric oxide as catalyst.



Mechanism: $O_2 + 2[NO] \rightarrow 2[NO_2]$
intermediate compound



2. Adsorption theory for heterogeneous catalysis: \rightarrow
Heterogeneous catalytic reactions generally proceed through adsorption of the reactants on the surface of the catalyst. This theory explains the mechanism of reaction between 2 gases catalysed by a solid.
Example $A + B \xrightarrow{\text{Catalyst}} C + D$.

Mechanism Step 1: Adsorption of reactant molecules on the solid surface. The reactant molecule A & B strikes the catalyst surface. They are held up at the surface by weak Vander Waal's forces.

Step 2: Formation of activated complex. The particles of the reactants join to form an intermediate complex which is unstable.

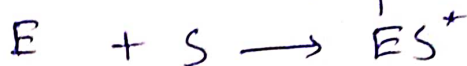
Step 3: Decomposition of activated complex. The activated complex breaks to form the products C and D . It was held by partial chemical bonds.

Step 4: Desorption of products from the catalyst surface. The particles of products are now stable and can lead an independent existence.

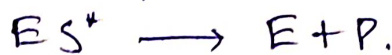
Enzyme catalysis: \rightarrow
Enzymes are protein molecules which act as catalyst to speed up organic reactions in living cells. The catalysis brought about by enzymes is known as enzyme catalysis.

Mechanism of enzyme catalysis: →

Step 1: Binding of enzyme to substrate to form an activated complex

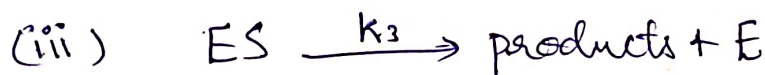


Step 2: Decomposition of the activated complex to form product.



Michaelis - Menten Equation: →

The enzyme catalysis is believed to involve the reversible formation of an intermediate between the enzyme and the substrate, followed by its decomposition into products and the enzyme.



The net rate of formation of intermediate ES is given by $\frac{d[ES]}{dt} = k_1[E][S] - k_2[ES] - k_3[ES]$.

Assuming a steady state condition for the intermediate ES i.e. $\frac{d[ES]}{dt} = 0$.

$$[ES] = \frac{k_1[E][S]}{k_2 + k_3}$$

The rate of reaction is given by $R_t = \frac{d[\text{Product}]}{dt} = -\frac{d[ES]}{dt}$.

From the reaction mechanism.

$$R_t = -\frac{d[ES]}{dt} = k_3[ES] = \frac{k_3 k_1 [E][S]}{(k_2 + k_3)}$$

E_0 is the initial concentration of the enzyme, then any instant, $[E_0] = [E] + [ES]$

$$[ES] = [E_0] - [E]$$

$$[E]_0 - [E] = \frac{k_1[E][S]}{k_2 + k_3}$$

$$[E] = \frac{E_0}{1 + \frac{k_1[S]}{k_2 + k_3}} = \frac{[E_0]}{1 + \frac{[S]}{K_s}}$$

The constant $K_s = \frac{k_2 + k_3}{k_1}$ is called Michaelis constant.

$$R_t = \frac{k_3 k_1}{k_2 + k_3} \frac{[E_0][S]}{1 + \frac{[S]}{K_s}} = \frac{k_3 [E_0][S]}{K_s + [S]}$$

If K_s is small as compared to $[S]$ i.e. all the enzyme is present in the form of complex, then its rate will be maximum and described as.

$$R_{max} = k_3 [E]_0, \text{ then}$$

$$R_t = \frac{R_{max} [S]}{K_s + [S]} \text{ - Michaelis-Menten Equation.}$$

Michaelis constant is defined as the substrate concentration at half the maximum reaction velocity.

$$R_t = \frac{R_{max}}{2}$$

$$\frac{R_{max}}{2} = \frac{R_{max} [S]}{K_s + [S]}$$

$$K_s + [S] = 2[S]$$

$$K_s = [S]$$


KUVEMPU UNIVERSITY

**DVS COLLEGE OF ARTS AND SCIENCE
SHIMOGA-577201**



An Assignment Report On

“DI-HYDRIC AND TRI –HYDRIC ALCOLHOLS”

*A Seminar report submitted in partial fulfillment of the requirements for the III Semester
degree of Bachelor of Science in PCM
of Kuvempu University, Shankarghatta, Shimoga Dist.*

Submitted by

Ms. Ruchitha N.

Rgd. No. S1803447

Under the Guidance of

Mr. Praveen T. M.
Department of Chemistry
DVS College of Arts and Science, Shimoga
2020-21



2020-2021

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6	Introduction about trihydric alcohols	-6-
7	Manufacture of propene	-7-
8	preparation of glycerol.	-8-9

DIHYDRIC ALCOHOLS (Diols)

Introduction:-

propanediol alcohols are dihydric alcohols having from two to six carbon atoms such as 1,3-propanediol and 1,4-butanediol. Glycols are dihydric alcohols that constitute an important class of organic compounds and are used widely in basic and applied research.

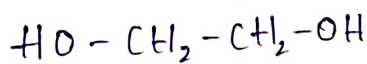
The IUPAC name of dihydric alcohols is called "diols" the common name of dihydric alcohols is glycols in Greek Glycys = sweet since they have a sweet taste.

In diols the two -OH group may be present on the same carbon or different carbons. The dihydric alcohols having the -OH group to the same carbon are unstable and undergo spontaneous decomposition to yield a carbonyl compound.

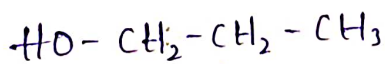
Nomenclature:-

The common names are assigned to individual diols after the name of the corresponding alkene or the polymethylene from which they could be obtained by direct hydroxylation.

Ex:- Alkane glycol or polymethylene glycols.



Ethylene glycol

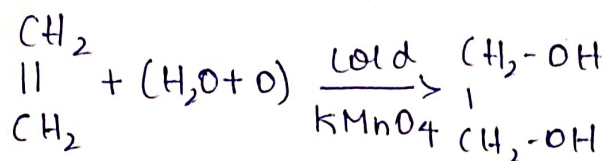


propylene glycol

Preparation of Glycol from alkene:-

Hydroxylation of Ethylene:-

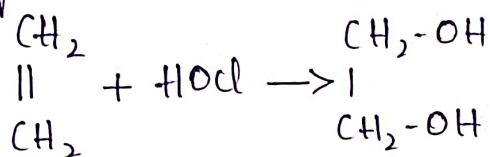
Ethylene glycol may be prepared by passing ethylene into cold dilute potassium permanganate solution.



Ethylene glycol.

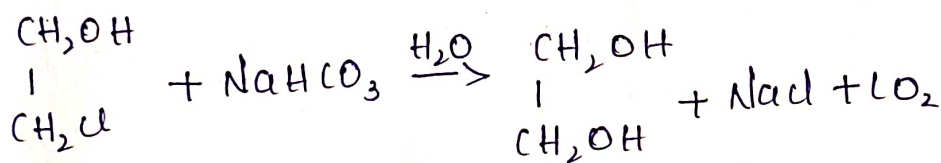
Hydrolysis of Ethylene chlorohydrin:-

Ethylene chlorohydrin required in the process is made by passing ethene into aqueous hypochlorous acids.



Ethylene chlorohydrine

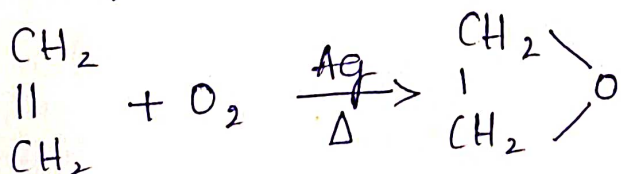
The Ethylene chlorohydrine undergo hydrolysis in the presence of NaHCO_3 to produce ethylene glycol.



Ethylene glycol.

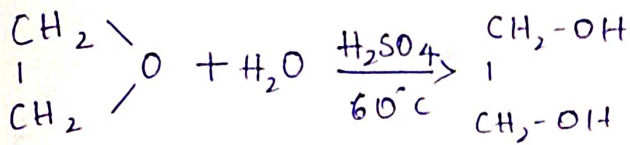
Hydrolysis of Ethylene oxide:-

Ethylene oxide is made by passing a mixture of ethylene and oxygen over heated silver catalyst.



Ethylene oxide.

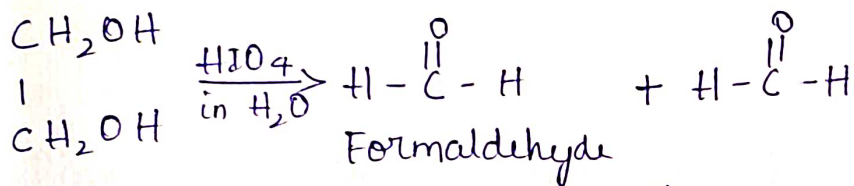
The Hydrolysis of ethylene oxide with H_2O at 60°C in the presence of H_2SO_4 catalyst to give Ethylene glycol



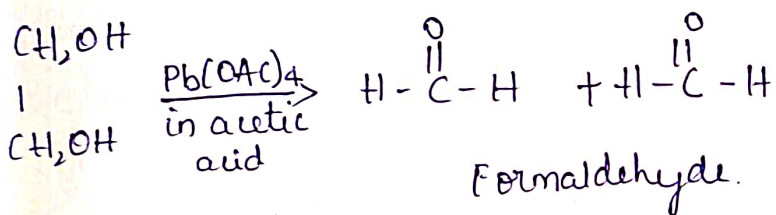
Ethylene glycol

oxidative cleavage of diols using lead tetra acetate and periodic oxide:

The oxidative cleavage of vicinal diols using periodic acid and lead tetra acetate to yield the aldehydes and ketones

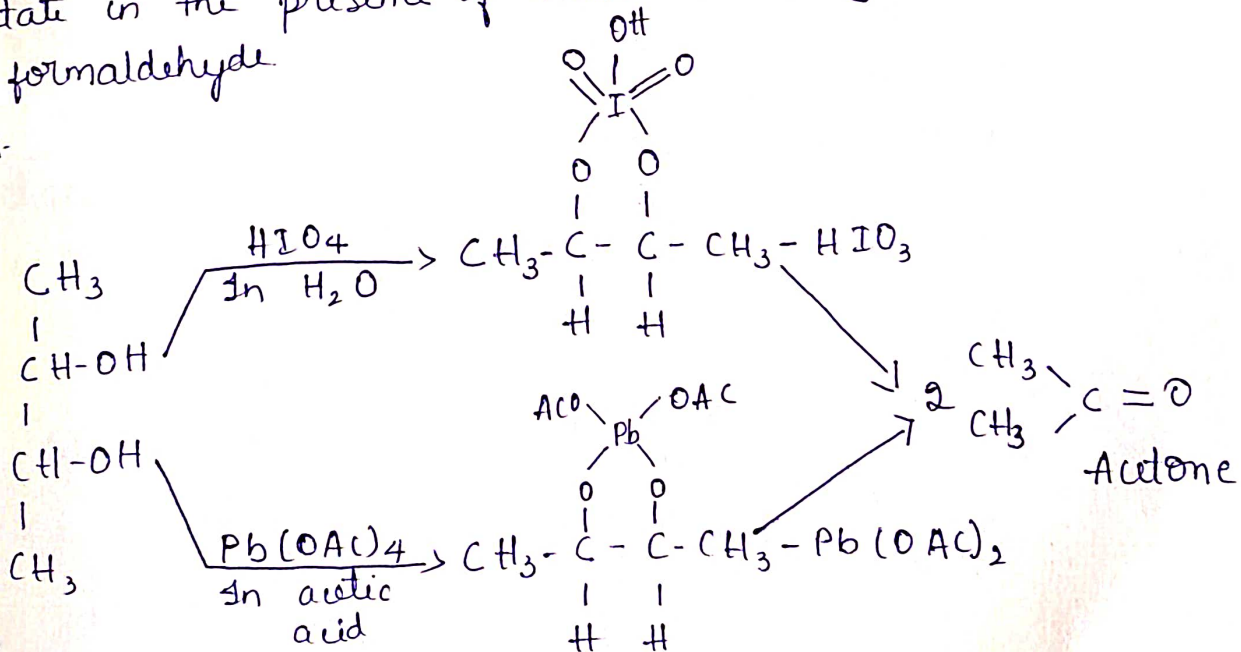


The oxidative cleav of ethylene glycol by periodic acid (HIO₄) in the presence of H₂O to give formaldehyde



The oxidative cleavage of ethylene glycol by lead tetra acetate in the presence of Acetic acid to yield two molecules of formaldehyde

x:-



Uses of Ethylene Glycol:-

As an Antifreezer in Automobile radiator because it forms low freezing mixture with water it is solid under the trade of prestone for this purpose.

For preventing deposition and formation of ice and aeroplane wings.

In making low freezing dynamite.

As a coolant for Aeroplane engines.

As a solvent and preservative.

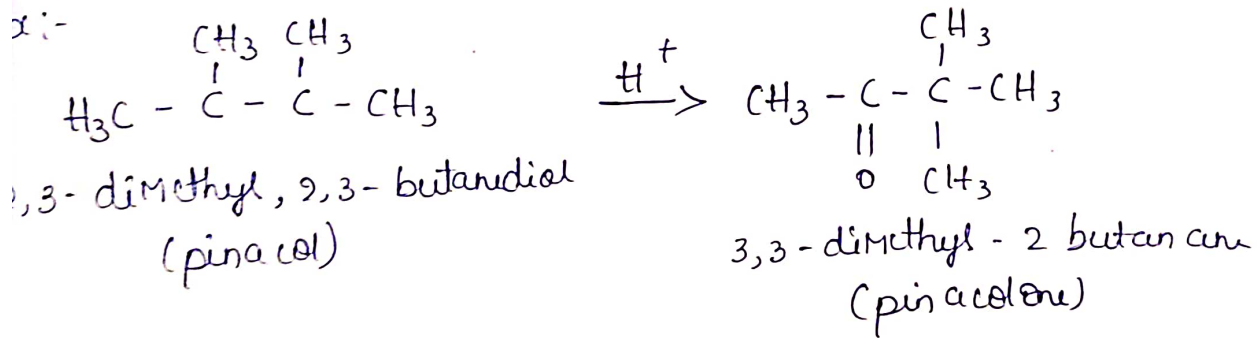
As plasticizer for viscous sugar rayon and as an intermediate in the manufacture of polythene polymers.

For the preparation of Dioxane, diethylene glycol, ethylene dinitrate to ethylene glycol.

As dielectric in electric condensers.

Pinacol - pinacolone Rearrangement:-

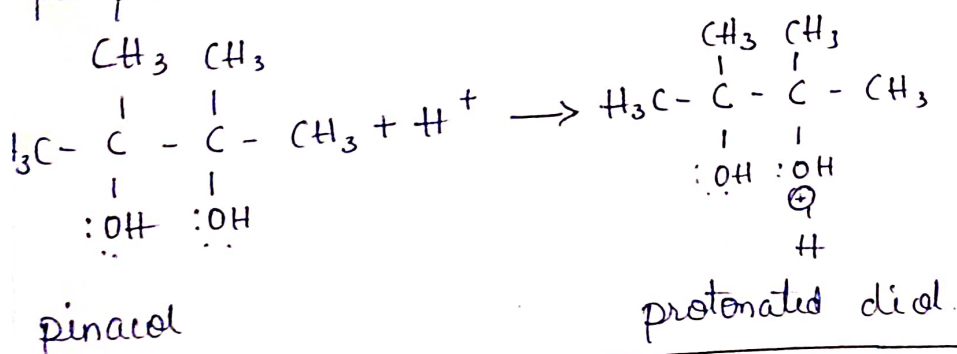
Completely substituted 1,2-diols such as 2,3-dimethyl, 2,3-butanediol are known as pinacols. They undergo dehydration & rearrangement in acid to form ketones this known as pinacol-pinacolone rearrangement reaction.



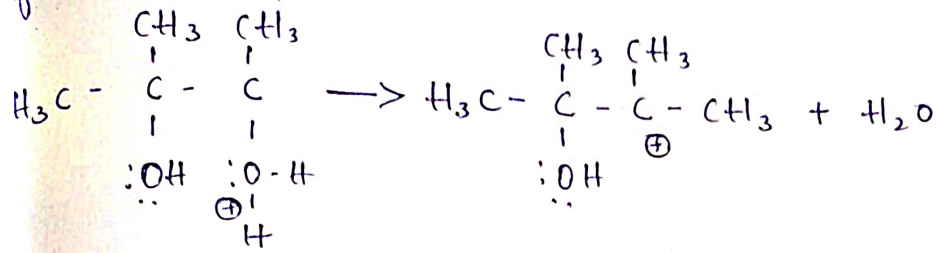
Mechanism:-

The Mechanism of the above reaction involves the following steps.

Step 1:- protonation of the 1,2-diol



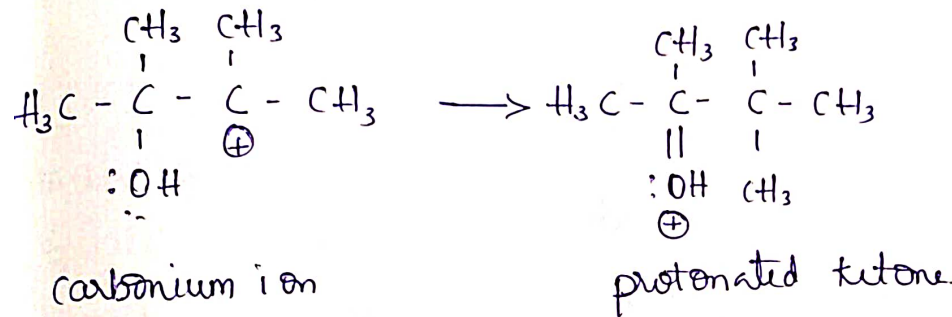
Step 2:- formation of carbonium ion by loss of water from the protonated diol



protonated diol

carbonium ion

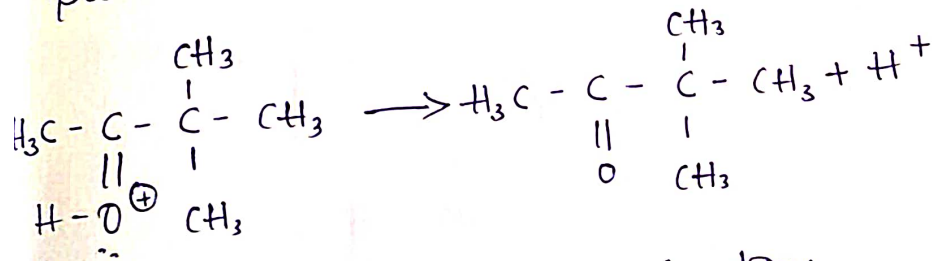
Step 3:- Rearrangement of carbonium ion by 1,2-shift



carbonium ion

protonated ketone

Step 4:- Formation of ketone by loss of proton from the protonated ketone



protonated ketone

pinacolone

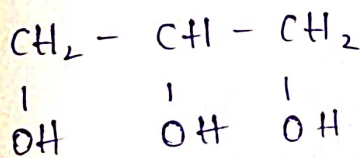
TRIHYDRIC ALCOHOLS

Introduction :-

Alcohol containing -OH group are called trihydric alcohols. The introduction of the third -OH group in a diol molecule raises the Boiling point by about 100°C and also increases the viscosity. An increasing the number of -OH group also enhances the hydrogen bonding ability and association are by raising the boiling point.

Nomenclature :-

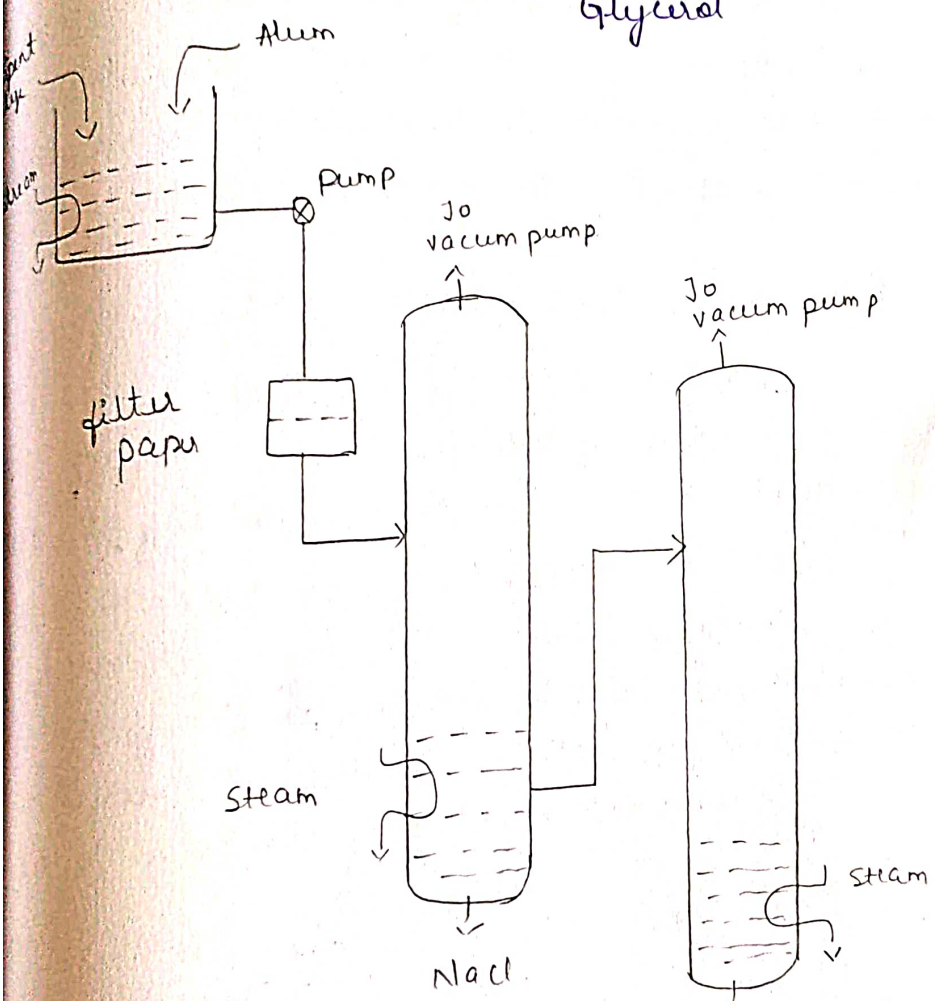
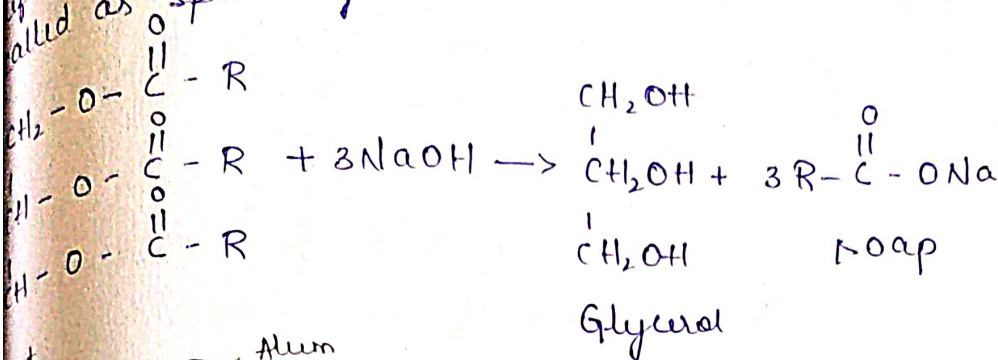
Glycerol is the simplest trihydric alcohol (triol). The name glycerol or glycine was originally derived from the word "glycerol" (sweet). Its IUPAC name is 1,2,3-trihydroxypropane since glycerol should be considered as trihydroxy derivative of propane



1, 2, 3- propane triol

Manufacture of Glycerol from spent lye:-

In soap manufacture, the fat is hydrolysed by boiling with alkali solution. The carboxylic acid produced by hydrolysis reacts with the alkali to form solid while the glycerol is left in the solution. The soap is filtered out. The filtrate is called as spent lye.



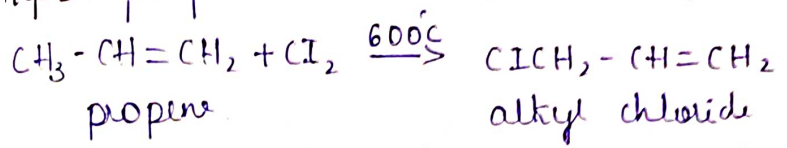
Spent lye contains 4 to 6% glycerol, unused alkali soluble soaps, suspended impurities. It is allowed to stand in a tank where most of the suspended impurities settle down. The clear solution is transferred to a new tank where it is first treated with alum to neutralize excess alkali. It is then treated with steam.

The remaining excess alkali is precipitated as aluminium hydroxide and the soluble soaps are converted into insoluble aluminium soaps. These impurities are filtered out the filtrate is then concentrated under vacuum when most of the sodium chloride is separated out. This is filtered and the filtrate is treated with animal charcoal to remove coloured impurities. After the filtration it is again obtained is 98% pure. To obtain pure glycerol it is redistilled under vacuum until distillate has the specific gravity of 1.26.

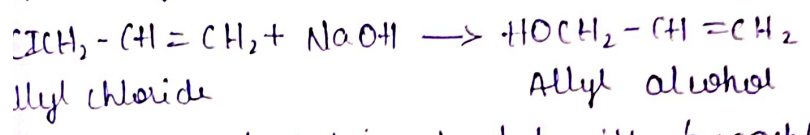
Preparation of propene:-

Large quantities of glycerol are obtained as by product in manufacture of soap. However, a by product supply is not sufficient today much of glycerol is manufactured from propene obtained by the catalytic cracking of petroleum following 4 steps are involved.

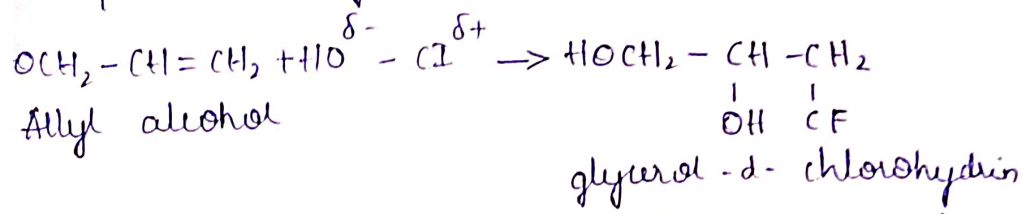
Step 1:- propene is treated with Cl_2 at $600^\circ C$ to give alkyl chloride



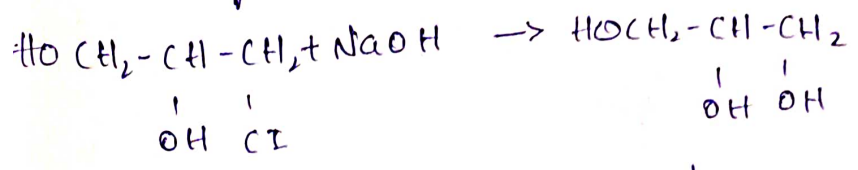
Step 2:- Alkyl chloride is treated with dil NaOH gives allyl alcohol



Step 3:- Allyl alcohol is treated with hypochlorous acid to give a chlorohydrin the addition of HOCl to the carbon-carbon double bond takes place according to the markovnikoff rule



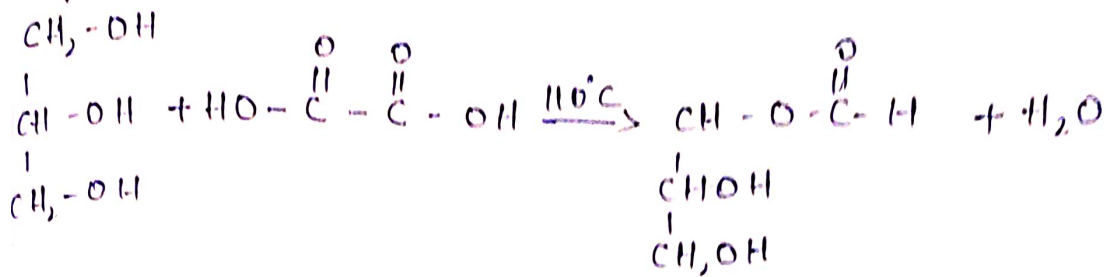
Step 4:- The chlorohydrin is treated with dil NaOH to yield glycerol



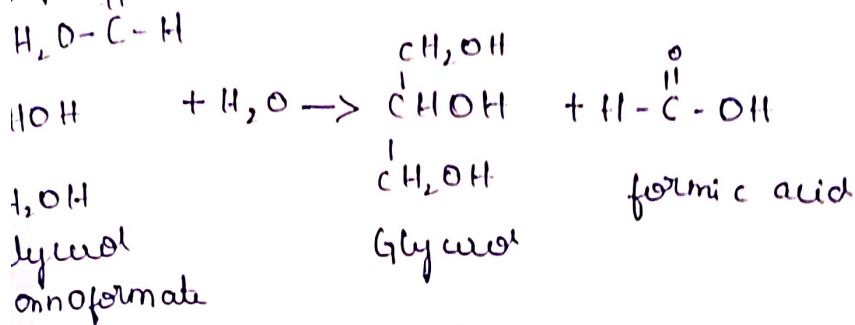
glycerol- α -chlorohydrin

Reaction with oxalic acid at different temperature:

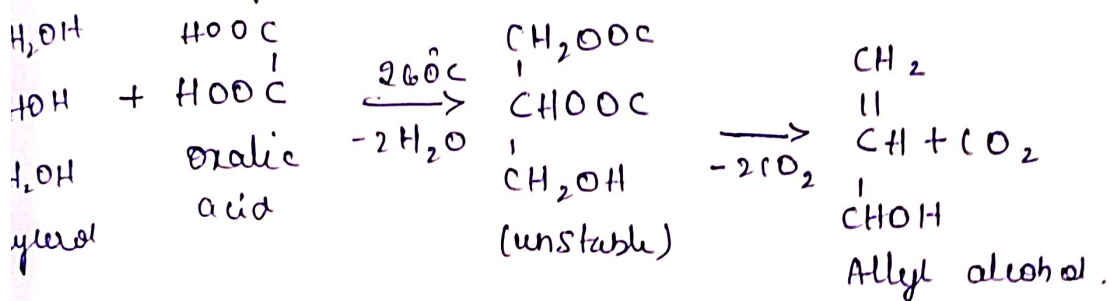
Glycerol reacts with oxalic acid in two ways:-
 At 110°C glycerol reacts with oxalic acid to form glycerol monoformate



glycerol manufacture on hydrolysis gives formic acid & glycerol

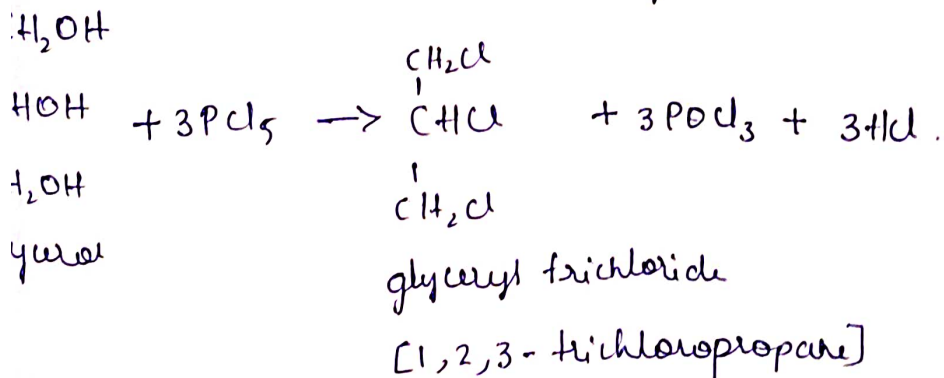


At 260°C glycerol reacts with oxalic acid to form allyl alcohol



Reaction with PCl₅-

Glycerol reacts with PCl₅ to form glycerol trichloride. All these OH groups are replaced by Cl atom



DVS OF ARTS, SCIENCE AND
COMMERCE COLLEGE
SHIVAMOGGA

SMALL BUSINESS MANAGEMENT

NAME

:-

VANISHREE C.P

II B Com

ROLL NO

:-

58

TOPIC

:-

General format
of project Report.

SUBMITTED TO

:-

Raghmi Mam

Project Report

Project report is a means for communicating project work experience to others. A project report is a formal statement of the project process and its result. It narrates the problem studied, methods used for studying it and the findings and conclusions of the study.

A project report is a document which provides details on the overall picture of the proposed business. The project report gives an account of the project proposal to ascertain the prospects of the proposed plan/activity.

The General format of project report as follows :-

Project at Glance

Name of the Unit :- Shree company ltd

Address for communication :-

New Tirthahalli Road

Near Shankara eye hospital

Shimoga

Karnataka 577201

Type of Unit :- large Scale industry

Name of product :- Helmet

Partners name and address :-

1. Shreeraksha
2. Vanighree
3. Shreevathga

Production location :-

Industrial area

B.H Road

Shivammogga

History of product :-

The world helmet is diminutive from helm, a medieval word for protective combat headgear. the medieval great helm covers the whole head and often is accompanied with camail protecting throat and neck as well. Originally a helmet was a helm which covered the head only partly and protected it from injury in accidents.

Introduction of product :-

A helmet is a form of protective gear worn to protect the head.

More specifically, a helmet complements the skull in protecting the human brain. Originally, a helmet was a helm which covered the head only partly and protected it from injury in accidents.

In civilian life, helmets are used for recreational activities and sports. Examples: jockeys in horse racing, American football, ice hockey, cricket, baseball, camogie, hurling and rock climbing. Dangerous work activities

Examples: construction, mining, riot police. Transportation

Examples: motorcycle helmets and bicycle helmets. Since the 1990s, most helmets are made from resin or plastic, which may be reinforced with fibers such as aramids.

Partner's details:-

1. Shreeraksha:-

Name :- Shreeraksha

Age :- 20 Years

Davanagere || Dist ||

Financial contribution :- 30%

Responsibility :- Financial department
manager

Education :- B B M

from

Davanagere university

Share of profit :- 30%

2. Vanighree

Name :- Vanighree

Age :- 24 Years

Address :- Channagiri

Davanagere || Dist ||

Financial contribution :- 40%

Responsibility :- Marketing Department
manager

Education :- M B A

from

Bangalore University

Share of profit :- 40%

Additional responsibility :-

Human Resource
manager

Shree

3.

Name :- Shreevathga

Age :- 24 Years

Address :- Vinobanagar
Shivamoga

Financial contribution :- 30%

Responsibility :- production manager

Education :- MBA
from

Bangalore university

Share of profit :- 30%

Marketing potential :-

India Bike helmet market,

By type (MTB Helmet, Road Helmet and
Sports Helmet), By Distribution channel
showrooms, Supermarket/Hyper market,

Brand Stores, Online and Others),
Competition forecast and Opportunities,
2014 - 2024.

India bike Helmet market is projected to grow during 2020-2024. Innovation such as carbon fibre helmet, air cooled technology in helmet, helmet with anti-glove vigor, push button and helmet lock features, increasing number of helmet manufacturers and safety rules. Moreover, increasing disposable income, increasing disposable income, increasing disposable population and growth auto mobile sector - are some of the other factors expected to propel demand for bike helmet over the next five years.

Years considered for this report:

Historical Year : 2014 - 2017

Base Year : 2018

Estimated Year : 2019

Forecast period : 2020 - 2024

DVS College of Arts and Science.

Shivanogga.

Name :- + Anjali S

Course :- BCA

Sem :- Ist Sem

Subject :- Computer fundamental.

Lack of Decision-making.

Decision-making is a complicated process involving information, knowledge, intelligence, wisdom, and ability to judge. The computer system does not have the ability to make decisions on their own because they do not possess all the essentials of decision-making.

Computers can't Decide.

Computers are incapable of decision making as they do not possess the essential elements necessary to take a decision. That is knowledge, information, wisdom, intelligence and the ability to judge.

Assignment

Limitation of computers.

Lack of common-sense:-

This is one of the major limitations of computer systems. No matter how efficient fast and reliable computer systems might be but yet do not have any common sense because no full-proof algorithm has been designed to programme logic into them. As computers function based on the stored programme(s) they simply lack common sense.

Zero IQ:-

Another of the limitations of computer systems is that they have zero intelligence quotient (IQ). They are unable to see and think the actions to perform in a particular situation unless that situation is already programmed into them. Computers are programmable to complete each and every task, however small it may be.

Computer can't Express:—their Ideas In Any type of Research ideas plays a vital role. In this context, Computer can't express their ideas.

Computers can't Implement:—Though Computers are helpful in storage of data and can contain the contents of Encyclopedias Even, but only humans can Decide and implement the policies.

4. Education:—The application of Computer play vital role in Computer aided learning and teaching is changing the Entire Spectrum of our Education System. The multimedia-rich computerized animation and video help Students to understand the concepts in a very simple and effective manner.

5. media and communication:—The application of Computer has played a major role in revolutionizing the communications system. From advent of telephone and television which were perceived as incredible things we have come a long way to enjoy the facilities like mobile phones, the internet, Email, Sms, chatting, cable TV, video conferencing etc.

6. Criminal identification and law Enforcements—
The application of computers can create close resembling Photographs of criminals This help CBI (Central Bureau of Investigation) Staff to identify the criminals. The Police use the DNA finger printing technique to identify accused with the help of Skin, hair, or blood Samples collected from the Site of crime.

The application of Computer in various fields.

1. **Military:** - The application of computer plays a vital role in the design and development of high tech weapons for defense where absolute accuracy is essential. The whole world saw the vast use of computers in defense during the Gulf and Afghanistan wars and also in the 1991 war.
2. **Banks:** - As a result of the computerization and networking of a large number of banks, several facilities are being offered to the customers. Using online banking, you can check your past transactions from the date of the account opening with real time balance.
3. **Research:** - The computer is facilitating the research work in a tremendous way by performing complex computations which some times seem impossible for humans. Some of them are listed below.
4. **Entertainment:** - At home, the application of computer is being used for as well as entertainment with the advent of a computer, the member of the family can have easy access to games, music, mail e-mail, chatting, and researching for their projects and assignments. People can even enjoy the facility of watching television on their computers.
5. **Business:** - Computer has helped in improving business activities throughout the world. The organization can have access to the latest technology and manpower across the world. e-commerce has completely changed the scenario of online shopping.
6. **Book Publishing:** - With the help of the application of computer, designing, typing, and editing work can be done with great ease and efficiency. We can insert pictures, apply various formatting features and styles to a book in no time using a computer.

10. Commercial Purpose:- Advanced reservation or room in hotels and booking of cinema tickets is now possible from anywhere with the advent of the Internet. The Billing System theater, shopping malls are hotels that have become possible through computers.

Input devices

- * Keyboard
- * Joy Stick
- * Light Pen
- * Track ball
- * Scanner
- * Graphic Tablet
- * microphone
- * magnetic ink card reader (MICR)
- * optical character reader (OCR)
- * Bar code Reader
- * optical mark reader (OMR)

Output devices:-

- * monitor
- * webcam
- * Speaker
- * microphone
- * pointer
- * headphone
- * plotter
- * CD/DVD
- * USB

Ravi Kant
A.

Secondary Storage Example:-

technologies include

- * USB flash drives
- * floppy disks
- * magnetic tape
- * paper tape
- * punched cards
- * Ram disks.

D.V.S college of arts and science, shimogga.

Name :- Preeti.S

class :- I BSC [PMCS]

Subject :- computer science.

assignment :- 01

By

Preeti.S

I BSC [PMCS]

D.V.S college of arts and science, shimogga.

TO,

Nikitha ma'am

D.V.S college of arts and science, shimogga.

1. What is variable declaration with an example.

→ All variables must be declared before they are used in a C program. The purpose of declaring variables is to reserve the amount of memory required for these variables. The declaration is made in the declaration part of a C program.

Syntax :- Data type Variable list semicolon

Ex :- int length;
 float area;

2. List the rules for naming an identifier.

-
- First character must be an alphabet.
 - Must consist of only letters, digits, or underscores.
 - Only first 31 characters are significant.
 - Cannot use a keyword.
 - Must not contain whitespace.

3. Convert i) $11101_{(2)} = 29_{(10)}$

2^4	2^3	2^2	2^1	2^0
1	1	1	0	1

$$11101_{(2)} = 16 + 8 + 4 + 0 + 1 = 29_{(10)}$$

ii) $94.825_{(10)}$

$$94.825_{(10)} = 1011110.1101_{(2)}$$

$$\begin{array}{r}
 2 \overline{) 94} \\
 \underline{47} - 0 \\
 2 \overline{) 23} - 1 \\
 \underline{11} - 1 \\
 2 \overline{) 5} - 1 \\
 \underline{2} - 1 \\
 1 - 0
 \end{array}$$

$$\begin{array}{r}
 0.825 \times 2 = 1.65 \quad 1 \\
 0.65 \times 2 = 1.3 \quad 1 \\
 0.3 \times 2 = 0.6 \quad 0 \\
 0.6 \times 2 = 1.2 \quad 1
 \end{array}$$

$$= 1011110.1101_{(2)}$$

4. Differentiate Hardware and Software.

Hardware	Software.
<ul style="list-style-type: none"> • These are physical components of a computer system. • users can see touch and feel the hardware • Hardware works based on the instructions of the software. • Hardware components are less expensive. 	<ul style="list-style-type: none"> • These are the logical components of a computer system. • users cannot touch the software • software tell the hardware what to do. • software are generally costlier as compared to hardware.

5. Explain general form of scanf().

→ Syntax: scanf("control string", addresshint),

Q. Define a) compiler b) loader

a) compiler

→ It is a program which translates a high level language program into a machine level language program.

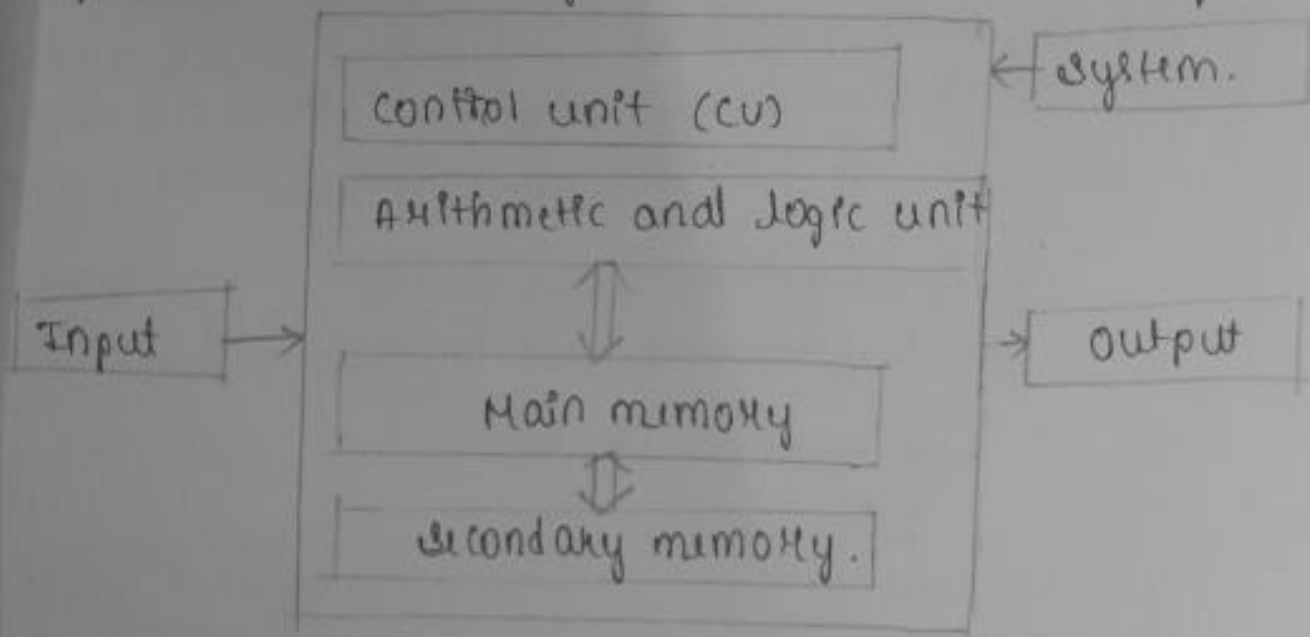
• It is slow speed because a compiler goes through the

entire program and then translate the entire program into machine code.

↳ loader :- Loader is a program that loads machine code of a program into the system memory.

Q. What is a computer? with neat block diagram, explain the functional units of a computer system.

→ Computer is an electronic device which receives the input & processes the data and gives the result in desired format.



Input :- Accept the data and instruction from the outside world. Convert it to a form that computer understand. Supply the converted data to the computer system for further processing.

Storage unit :- The storage unit of the computer holds data and instructions that are entered through the input unit.

there are two types of storage

① Primary storage

② Secondary storage.

System unit :- Fetching data & instruction from the memory. Interpreting the instruction. Controlling the transfer of data.

and instruction to and from the main memory. The overall ~~dep.~~ supervision of a computer system.

Memory devices :- memory devices used to store the data and instructions fed by the user. The computer memory is classified into :-

- CPU register.
- main memory.
- secondary memory.
- cache memory.

output devices :- once the data & instructions are processed, the user can choose to display such results on the output devices.

Ex :- printer, plotter, speaker, and etc.

3. Explain the types of programming language!

→ These are classified into two categories.

programming language

low level ~~pre~~ language

Machine language

assembly language

high level language

General purpose HLL

Specific purpose HLL

Programming language is a set of rules called syntax which the user has to follow, to instruct the computer what operation has to be performed.

low level language :- The low level languages are easily understood by computers. They are machine dependent languages.

low level language is of two types :-

- ① Machine level language.
- ② Assembly level language.

1. Machine level language is nothing but the set of instruction given to the computer in the form of 0's and 1's.
2. These are the programming language which use the symbolic instruction, symbolic oriented programming language is known as assembly language or symbolic language.

High level language - Programming languages that are more concerned with the problem specification and not oriented towards the details of a computer are called the high-level languages.

It is classified into two types

i) General purpose HLL - These are used in the fields such as teaching, training, business, art, science etc

ii) Specific purpose HLL - These are the languages which restricted to a particular fields.

ex: COBOL, PROLOG etc

9. Describe basic structure of a C program. Give an example.

→ Documentation section =

Link section

Definition section

Global declaration section

Main function

Subprogram section.

1) Documentation section - It is the part of the program where the programmer give the details associated with the program

He usually gives the name of program, the details of the author and other details like the time of coding and description. It gives anyone reading the code the overview of the code.

Ex: /* Documentation section:

Program name: Program to find the area of circle

Author: Varun

Date: 12/01/2020

Time: 10 AM.

*/

• Link section: The link section consists of the header files of the functions that are used in the program. It provides instructions to the compiler to link function from the system library. This part of the code is used to declare all the header files that will be used in the program. This leads to compiler being told to link the header files to the system libraries.

Ex: #include <stdio.h> // link section.

#include <conio.h> // link section.

Definition section:- All the symbolic constants are written in definition section. Macros are known as symbolic constants.

Ex: #define PI 3.14 // definition section.

Global declaration section: The global variables that can be used anywhere in the program are declared in global declaration section.

Ex: float area; // global declaration section.

• Main function section:- The main function section in every C program. This section contains two parts - declaration & executable part. The declaration part declares all the variables that are used in executable part. These two parts must be.

DVS College of Arts and
Science.
Shivamogga.

Names - Hanthiha. S

Course: - BCA

Sem: - 1st Sem

Subjects - IIT

Part - A.

1.a. Define Software?

Software is the set of programs, procedures, algorithms, and documents concerned with the operation of data processing system.

b. Define Assembler.

Assembler is the translator for assembly language. Assembler is the system software which translates programs written in assembly language into machine language.

c. Define linker.

A source program written in high-level language may contain a number of modules or segments. For the program to be executed properly the modules are to be linked properly and the various library segments include so the execution of program is sequential. This operation is performed by software called as the linker. The linker system software which links the modules or program segments together so that they can be executed properly with proper reference.

d. Define System Software.

System Software collection of system programs to perform common tasks or a system software is a program or a group of programs written for computer system software.

Define Interpreter?

Interpreter is a language processor or that translates an instruction of a high-level language program and immediately executes it before translating the next instruction of the source program.

Explain the types of software with an example.

The types of software are:-

1. Application software.
2. System software.

Application Software is a program or collection of programs written by the user to solve a particular problem.

Application Software or simply application, are often called productivity programs or end-user tasks. Application Software generally written in high-level languages. Application Software are hardware independent and these are portable.

Example:- MS-office, Tally, Sybase, etc.

System Software:-

System Software is a collection of system programs to perform common tasks. or a system is a program or a group of programs written for computer system management.

The objective of System Software is to efficiently perform the function commonly required by most of the users. In order to achieve this objective these programs are generally written at the machine level using instructions of for addressing various registers of the CPU. Thus System Software is hardware dependent and not portable. Input/output operations are generally performed by System Software. Programming languages like assembly like /c/ c++ / Pascal are used to develop System Software.

C). write a note on

i) Loader ii) Compiler.

i) Loader:- Once an executable program is generated someone will have to load it into the main memory of the computer so that it can be executed. This operation is performed by System Software called loader. It actually places the object code from secondary memory storage into main memory and starts execution. The loader is System Software which accepts the object program produced by the compiler or assembler and prepares them for execution.

ii) Compiler:-

Compiler is System Software that translates source code written in high level language into object code which is in machine language. A compiler will check the entire source code for syntax & semantic errors line by line & produces executable file only if it is free from all errors.

a) Explain the classification of Programming languages.

Language is a medium of communication. If we have to communicate with the computer, we require a suitable language understandable by the computer. Such a language is called programming language.

Programming languages:- It is a set of rules called syntax which the user has to follow, to instruct the computer what operations are to be performed.

* Machine level language:-

Machine level language is nothing but the set of instructions given to the computer in the form of 0's and 1's. So machine level language consists of only 0's and 1's. This is the language of computer. A 0 indicates low voltage level and 1 indicates high voltage level. The machine level language is considered as the first generation language. This is because the programming was started with this language.

Any sequence of 0's and 1's forms an instruction in the machine language. For example:-

1010101011

1110001000 etc.

* Assembly level language:- To overcome the drawbacks of the machine level language i.e., using 0's & 1's to represent an instruction, computer engineers developed a new programming language which uses the symbolic instructions. This symbolic

Instruction oriented programming language is known as assembly language or the assembly level language or symbolic language. The assembly language is considered as the second generation programming language.

for example:-

ADD for Addition.

SUB for Subtraction.

MUL for multiplication, etc

* High level language:-

The machine language and assembly language are highly machine dependent. It will be very difficult for the programmer to switch over from one machine language to another and from one assembly language which are more closely related to the problems than the machine. Programming language that are more concerned with problem specification and not oriented towards the details of a computer are called the high level languages (HLLs).

High level languages are English like languages. The elements of these languages are alphabets, digits, punctuation and other special symbols. The instructions composed of these elements. Hence, each and every instruction is easier to read, write and understand. Instructions in the high-level languages are machine independent. These are standardized as compared to the other two programming languages. Such as machine language and assembly language.

The Compiler & Interpreter are two translator programs which are used to translate the high level language programs into the machine language.

For Example:- Consider the high level language C program to add two numbers.

```
void main()  
{
```

```
    int a=10, b=20, sum; // value of a=10, b=20
```

```
    sum=a+b // Add value of a, b and store  
             in sum
```

```
    printf("sum=%d", sum); // print the result on  
                           the screen
```

```
}
```

list advantage & disadvantages of object oriented languages. *Ravi*

Advantage

- * Since everything is treated as objects, so we can model a real-world concept using oop.
- * Through inheritance, we can eliminate redundant code and extend the use of existing classes.
- * It is possible to have multiple instances of an object to co-exist without programs any interference.
- * It is possible to map objects in the project based on objects problem domain to those in the program.
- * It is easy to partition the work in a project based on object.
- * Software complexity can be easily managed.

Disadvantages:-

- * Designing a program in oop concept is a little bit tricky.
- * The programmer should have a proper planning before designing a proper skill such as a program using oop approach.
- * Since everything is treated as objects in oop, the programmer need proper skill such as design skill, programming skills, thinking in terms of objects etc.
- * The size of programmes developed with oop is larger than the procedural approach.
- * Since larger in size, that means more instructions to be executed, which results in the slower execution of programs.

Write a note on Event driven programming languages.

Event Driven: An event-driven application is a computer program that is written to respond to actions generated by the user or the system. In a computing context, an event is any identifiable occurrence that has significance for system hardware or software. It includes both user-generated actions like mouse clicks and keystrokes and system-generated events such as program loading.

In computer programming event-driven programming is a programming paradigm in which the flow of the program is determined by event such as user actions (mouse click, key presses), sensor outputs, or messages from other programs or threads. Event-driven programming is the dominant paradigm used in graphical user interfaces and other applications (e.g. JavaScript web applications) that are centered on performing certain actions in response to user input. This is also true for the programming of device drivers (e.g. Pin USB device driver stacks).

① Comparisons b/n conductors, semiconductors and insulators

Property	Conductors	Semiconductors	Insulators
1. Electrical conductivity	Very high (10^{-7} mho/m)	B/n those of conductors & insulators [i.e. 10^{-7} mho/m to 10^{-13} mho/m]	Negligible [10^{-13} mho/m]
2. Resistivity	Negligible i.e. less than $10^5 \Omega m$	B/n those of conductors & insulators i.e. $10^5 \Omega m$ to $10^5 \Omega m$	Very high more than $10^5 \Omega m$
3. Energy gap	zero or very small	more than in conductors but less than insulators eg: Ga $\Delta E_g = 1.3 eV$	very large eg: diamond $\Delta E_g = 7 eV$
4. Current carriers and current flow	Due to free electrons and very high	Due to free e^- & holes. more than in insulators	Due to free e^- but negligible
5. Number of current carriers [electrons or holes] at ordinary temp.	very high	very low	negligible
6. Condition of valance and conduction band at ordinary temp.	Both are completely filled or conduction band is somewhat empty eg: Al	Valance band is somewhat empty & conduction band is filled	valance band is completely filled & conduction band is completely empty.
7. Behaviour at 0k	Behaves like a superconductor	Behaves like an insulator	insulates only.

Property	Conductors	Semiconductors	Insulators
8. Temp. co-efficient of resistance (α)	Positive ✓	Negative ✓	Negative.
9. Effects of temp. on conductivity	conductivity decreases ✓	increases ✓	increases
10. On increasing temp. No. of current carriers	Decreases ✓	increases ✓	increases ✓
11. On mixing impurities their resistance	Increases ✓	Decreases ✓	Remains unchanged ✓
12. Current flow in the case takes place	Easily & very fast ✓	Very slow ✓	Doesn't takes place
13. Examples	Cu, Ag, Na Pt, Hg etc ✓	Ge, Si, Ga, As ✓	Wood, Plastic mica, diamond glass etc.

Comparison between intrinsic and extrinsic semiconductors

Intrinsic semiconductors	Extrinsic semiconductors
1. Pure semiconductors are known as <u>intrinsic semiconductors</u>	The semiconductor resulting from mixing impurity in it is known as <u>extrinsic semiconductor</u>
2. Their conductivity is <u>low</u>	Conductivity is <u>high</u>
3. No. of free electrons n_i in conduction band is equal to the number of holes p_i in valance band	In these $n_i \neq p_i$
4. These are not <u>practically used</u>	These are <u>practically used</u>
5. Energy gap is very <u>small</u>	More than in pure semiconductor
6. The fermi energy level lies in the middle of valance & conduction band	The fermi level shifts towards valance or conduction energy bands
7. Eg:- Si & Ge	Eg:- P, Sb, Ga, In etc. <u>loperits.</u>

Comparison between N-type and P-type semiconductors

N-type semiconductors

1. In these the impurity of some pentavalent element like P, As, Sb, Bi etc are mixed

2. In these the impurity atom donates one electron, hence these are known as donor type semiconductors.

3. The electrons are majority charge carriers & holes are minority charge carriers i.e. electronic density is more than hole density.
 $n_n \gg n_p$

4. There is majority of -ve particles (e^-) & hence are known as n-type semiconductors.

5. In these donor energy level is close to the conduction band and far away from valance band.

P-type semiconductors

1. In these the impurity of some trivalent element like B, Al, In, Ga etc are mixed

2. In these impurity atom can accept one electron, hence known as acceptor type semiconductors.

3. Holes are majority charge carriers & electrons are minority charge carriers i.e. $n_p \gg n_n$

4. There is majority of +ve particles (carriers) & hence are known as p-type semiconductors.

5. In these the acceptor energy level is close to the valance band & far away from conduction band.

Comparison between pn-junction diode and zener diode

pn-junction diode

can conduct current only in one direction

will be permanently damaged for a large reverse current

Normally used for rectification

A pn-junction diode is made of a crystal of semiconductor
-ors

zener diode.

zener diode allows the conduction in both directions

will not be permanently damaged for a large reverse current.

Used for voltage regulation

It allows e^- to tunnel from the valence band of p-type material to the conduction band of n-type.

Electronics Assignment

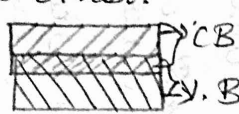
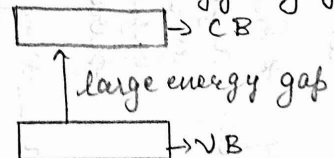
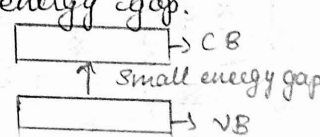
Submitted To :-

Omash Sir
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Submitted From :-

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1. Comparison between Conductor, Insulator and Semiconductor.

Conductor	Insulator	Semiconductor
<ul style="list-style-type: none"> * Large amount of electrons are available for conduction. * Conduction band and Valance band overlap each other. 	<ul style="list-style-type: none"> * No free electrons are available for conduction. * Conduction and Valance band are separated by a large energy gap called forbidden energy gap. 	<ul style="list-style-type: none"> * Conductivity of semiconductor lies between conductors and insulators * Conduction and Valance band are separated by a small energy gap. 
<ul style="list-style-type: none"> * Forbidden energy gap is 0. * Resistivity is of the order of $10^8 \Omega\text{-m}$ * Examples:- Aluminium, Copper etc. 	<ul style="list-style-type: none"> * Forbidden energy gap is nearly 6 eV. * Resistivity is of the order of $10^{18} \Omega\text{-m}$. * Example:- Wood, glass, Diamond etc. 	<ul style="list-style-type: none"> * Forbidden energy gap is nearly 1 eV. * Resistivity is of the order of $10^2 \Omega\text{-m}$. * Examples:- Silicon, Germanium, Carbon etc.

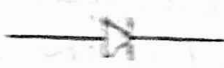
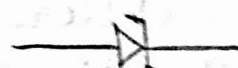
2. Distinguish between Intrinsic and Extrinsic Semiconductor

Intrinsic Semiconductor	Extrinsic Semiconductor
<ul style="list-style-type: none"> * Doping of impurity does not take place in intrinsic semiconductor. * The number of free electrons in the conduction band is equal to the number of holes in the valence band. * Electrical conductivity is low. * Electrical conductivity is a function of temperature alone. * Eg:- Silicon, Germanium 	<ul style="list-style-type: none"> * A small amount of impurity is doping in pure semiconductor. * The number of electrons and holes are not equal. * Electrical conductivity is high. * Electrical conductivity depends on temperature as well as amount of impurity doping in the pure semiconductor. * Eg:- Sb, P, In, Bi etc.

3. Difference between n type and P-type impurities

N-type Semiconductor	P-type Semiconductor
<ul style="list-style-type: none"> * They are obtained by adding pentavalent impurity atom. * Electrons are majority charge carriers. * Holes are minority charge carriers. * Impurity atoms ^{called} are called donor atoms. * Eg:- Boron, Aluminium 	<ul style="list-style-type: none"> * They are obtained by adding trivalent impurity atoms. * Holes are majority charge carriers. * Electrons are minority charge carriers. * Impurity atoms added are called acceptors. * Eg:- Arsenic

4. Compare Junction diode and Zener diode.

Points	P-N Junction diode	Zener diode
Definition	* It's a semiconductor diode which conducts only in one direction i.e. in forward direction.	* The diode which allows the current to flow in both forward and reverse direction.
Symbol		
Reverse current effect	* Damage the junction	* Don't Damage the junction.
Pepping level	* Low	* High
Breakdown	Occurs in higher voltage.	* Occurs in lower voltage.
Ohm's law	* Obey's	* Don't Obey.
Application	* For rectification	* Voltage stabilizer, wave shaping

5. Write a note on:-

a) Diffusion Current:

Diffusion current is a current in semiconductor caused by the diffusion of charge carriers. This is the current which is due to the transport of charges occurring because of non-uniform concentration of charged particles in a semiconductor. Diffusion current can be in same or opposite direction of a drift current.

It is necessary to consider the part of diffusion current when describing many semiconductor device. For example, the current near the

depletion region of p-n junction is dominated by the diffusion current and drift current are present. At equilibrium in a p-n junction the forward diffusion current in depletion region is balanced with a reverse drift current so that the net is 0.

The diffusion constant for a doped material can be determined with the Haynes-Shockley experiment. Alternatively, if the carrier mobility is known the diffusion coefficient may be determined from the Einstein relation on electrical mobility. The diffusion current obeys Ohm's law. $J = q \mu E$.

Drift Current :-

In condensed matter physics and electrochemistry drift current is the electric current or movement of charge carriers which is due to the applied electric field, often stated as the electromotive force over a given distance. When an electric field is applied across a semiconductor material, a current is produced due to flow of charge carriers.

The drift velocity and resulting current is characterized by the mobility. The drift is most commonly used in the context of electrons and holes in semiconductor, although the same concept also applies to material metals, electrolytes and so on.

The amount of drift current depends on the concentration of charge carriers and their mobility in a material and medium. The drift law obeys Fick's law $J = -qD \frac{dp}{dx}$

C. Fermi level :-

Fermi level is the highest energy state occupied by electrons in a material at absolute zero temperature. As the temperature is increased, electrons start to exist in higher energy state too.

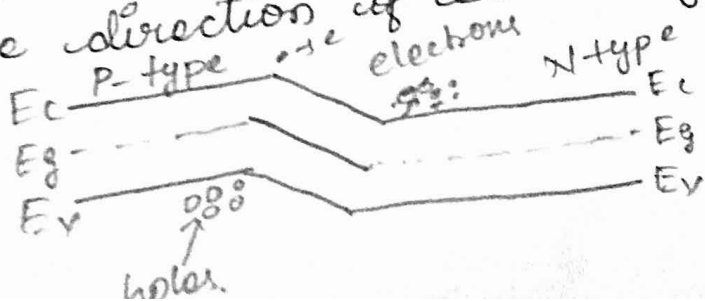
In a p-type S.C there is an increase in the density of unfilled states. Thus more electrons can be accommodated at lower energy states. In an n-type semiconductor, the DOS is increased. Thus, electrons have to be accommodated at higher energy levels.

Fermi level is also defined as the work done to add an electron to the system. More positive (more holes) in a p-type semiconductor mean lesser work needs to be done. Hence it has lower Fermi level.

6) What is tunneling effect and also explain it.

In electronics tunneling is known as direct flow of electrons across the small depletion region from n-side conduction band into the p-type valence band. In a p-n junction diode both positive and negative ions form the depletion region.

Due to these ions, an built electric potential or electric field is present in the depletion region. This electric field is present in the depletion region. This electric field gives an electric force to the opposite direction of externally applied voltage.



E_c = Conduction Band
 E_g = Energy Gap
 E_v = Valence Band

As the width of the depletion layer reduces, charge carriers can easily cross the junction. Charge carriers do not need any form of kinetic energy to move across the junction. Instead, carriers push through junction. This effect is called tunneling effect and hence the diode called tunneling diode.

Due to tunneling, when the value of forward voltage is low value of forward current generated will be high. It can operate in forward biased as well as in reverse biased. Due to high doping it can operate in reverse biased. Due to reduction in barrier potential, the value of reverse break down voltage also reduces. It reaches a value of zero. Due to this small reverse voltage leads to diode breakdown. Hence this creates negative resistance region.

6. List out n-type (Donor) & P-type (acceptor) impurities.

n-type:- Pentavalent impurity such as Arsenic, Antimony, Bismuth, phosphorus,

P-type:- Trivalent impurity such as Boron, Indium, Aluminium,

DVS College of Arts & Science College.

Shivamogga.

Electronics assignment.

Name :- Sinchana S

class :- 3rd BSC

Section :- 'C'

Reg no :- S1803467

Submitted to :-

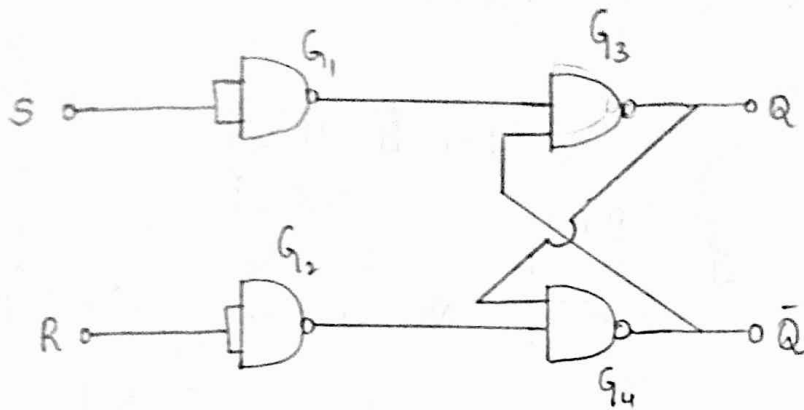
Anusha maam

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④ Explain the construction and working of S-R Flip-Flop



A S-R Flip Flop may be constructed in many ways. The above figure shows one way of constructing SR flip flop using four NAND gates. These are two simple I/P NAND gates and two O/P NAND gates. The feedback mechanism shown clearly in the figure.

There are two inputs called set i/p and Reset i/p. Applying triggering i/p to "S", sets the Flip Flop and applying triggering i/p to "R", Resets the flip flop.

circuit operation :-

Case ① :- When $S = R = 0$

In this case it can be seen that the o/p Q & \bar{Q} will remain in ~~this~~ their original state i.e no change in the o/p state.

Case ② :- When $S = 1$ & $R = 0$

In this case the o/p of G_1 is 0 \therefore irrespective of \bar{Q} . The o/p G_3 is 1 i.e $Q = 1$ \therefore The FF sets to 1.

Case ③ :- When $S = 0$ & $R = 1$

In this case it can be seen that the o/p Q changes to 0 i.e the FF resets to 0.

Case ④ :- When $S = R = 1$

In this case contradiction results because the

FF simultaneously tries to set & reset which is not possible \therefore This condition is forbidden or invalid.

Logic symbol :-



Truth table :-

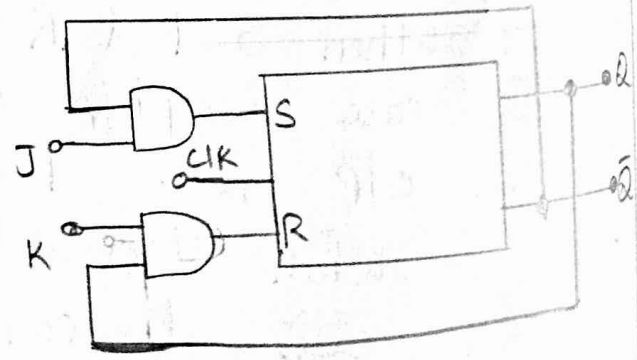
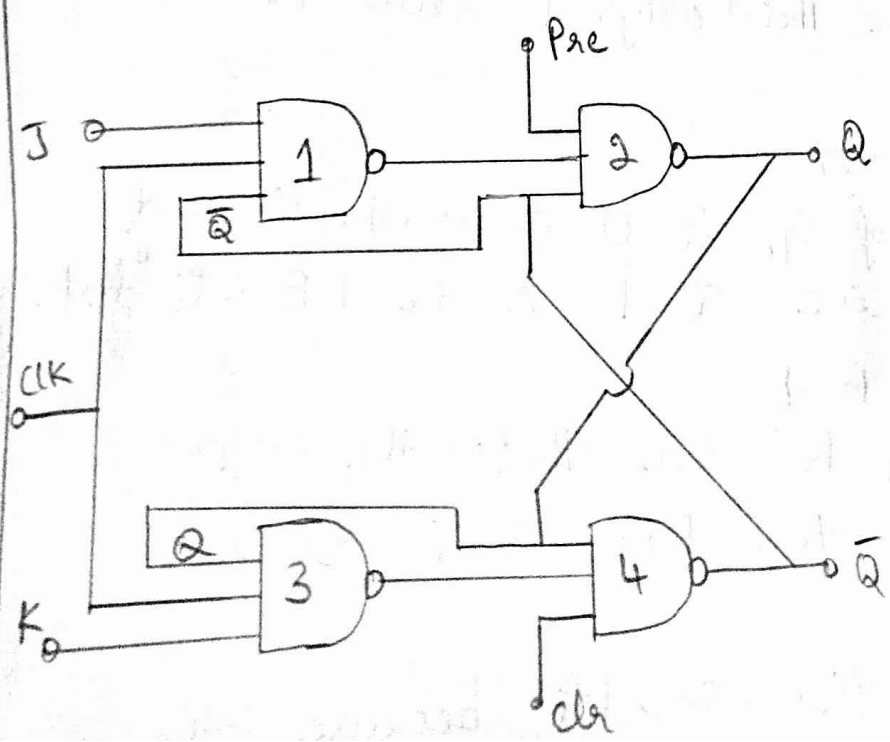
input		output	
S	R	Q	\bar{Q}
0	0	No change maintains previous state	
1	0	1	0 (sets)
0	1	0	1 (Resets)
1	1	Invalid or forbidden	

It may be noted that a flip flop has 2 outputs i.e. Q & \bar{Q} i.e. when Q=1, \bar{Q} =0 & vice versa \therefore Flip Flop is a natural circuit for producing a variable & its complement.

⑤ Explain the construction and working of J-K

Flip Flop.

\Rightarrow In S-R FF the condition S=R=1 is forbidden because it leads to a contradiction this uncertainty is avoided in another type of FF called J-K Flip Flop.



It can be constructed in many ways using a ~~diode~~ clocked SR FF and two AND gates, it can be constructed as shown in fig (a). We need to use AND gates but by adding extra terminals to gate G_1 & G_3 where \bar{Q} is feedback to G_1 & Q is feedback to G_3 .
 J-K FlipFlop is shown in fig.

Circuit operation:-

1) clk = 0 [i.e low] :- In this case the two gates G_1 & G_3 are disabled or inhibited because their o/p's are equal to 1 irrespective of the values of J & K.
 \therefore There will be no change in the state of the o/p.

2) When clk = 1 [i.e high] :-

case (a) :- When $J = K = 0$, In this case there will be no change in the state of o/p.

case (b) :- When $J = 1$, $K = 0$

Here again two cases arises.

i) If initially $Q = 0$ & $\bar{Q} = 1$
 In this case the 3 inputs to the gate G_1 are $J = 1$,

$clk = 1$, $\bar{Q} = 1$
 \therefore output of G_1 is Q & hence the o/p of G_2 changes to 1 i.e $Q = 1$ [$\bar{Q} = 0$]

ii) If initially $Q = 1$ & $\bar{Q} = 0$
 In this case 3 inputs to the gate G_1 are $J = 1$,

$clk = 1$, $\bar{Q} = 0$

\therefore The output of G_1 is 1 & hence the output of G_3 remains at 1 i.e $Q = 1$

\therefore when $J = 1$ & $K = 0$ Q changes to 1 if it is initially at 0 & Q maintained at 1 if it is at 1

③ When $J=0$, $K=1$

In this case similar to above of if Q is initially at 1. it will change to 0 [reset], and if it is initially at 0 it remains at 0.

④ When $J=1$, $K=1$ [again two cases arise]

i) Initially $Q=0$ & $\bar{Q}=1$

Now the three inputs to the gate G_1 is 1 \therefore its o/p is 0. Hence the output of G_2 i.e. Q becomes 1

ii) Initially $Q=1$ & $\bar{Q}=0$

Now the three inputs to the gate G_3 are 1 \therefore output is 0. \therefore The output of G_4 is 1 i.e. $\bar{Q}=1$

Hence $Q=0$. Thus when both i/p's are equal to 1.

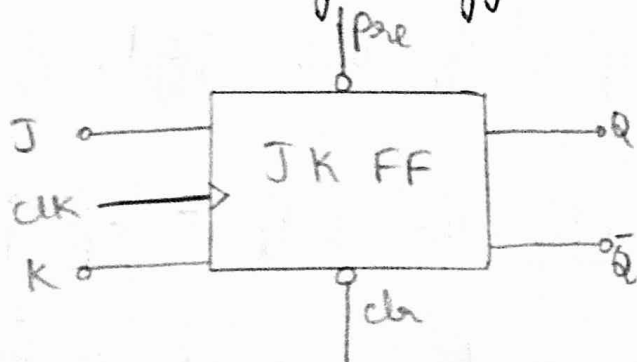
Q changes to 1 if it is initially at 0 & it changes to 0 if it is initially at 1. This is called Toggle.

Truth table :-

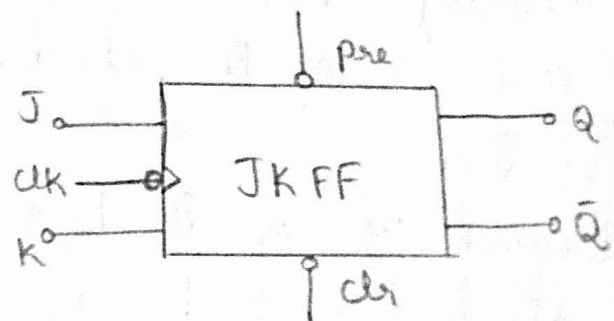
I/P			O/P
clk	J	K	Q \bar{Q}
0	x	x	No change
1	0	0	No change
1	1	0	1 0 [set]
1	0	1	0 1 [reset]
1	1	1	Toggle

Logic symbol :-

+ve edge triggered



-ve edge triggered



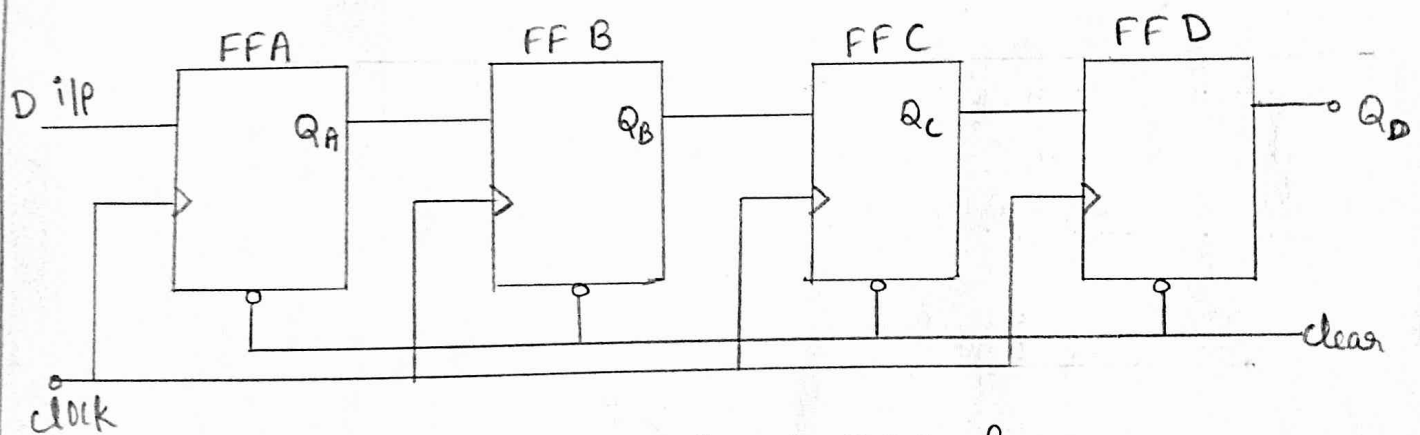
- 6) a) What are registers? And Mention different types
 b) Explain the working of SISO shift registers.

⇒ a) A group of cascaded Flip-Flop's used to store binary information is known as registers.

- Types :-
- ① Serial in serial out (SISO)
 - ② Serial in parallel out (SIPO)
 - ③ Parallel in parallel out (PIPO)
 - ④ Parallel in serial out (PISO).

b) SISO Shift register

A 4bit SISO shift register using Delay Flip Flop is as shown, there are four Flip-Flop's and a clock of each Flip-Flop are tied together.



* Output of FFA is input of FF B & so on

* Here the data are entered in serial form i.e bit by bit basis.

* Let us take an ex for illustrating serial entry of binary number say 1011

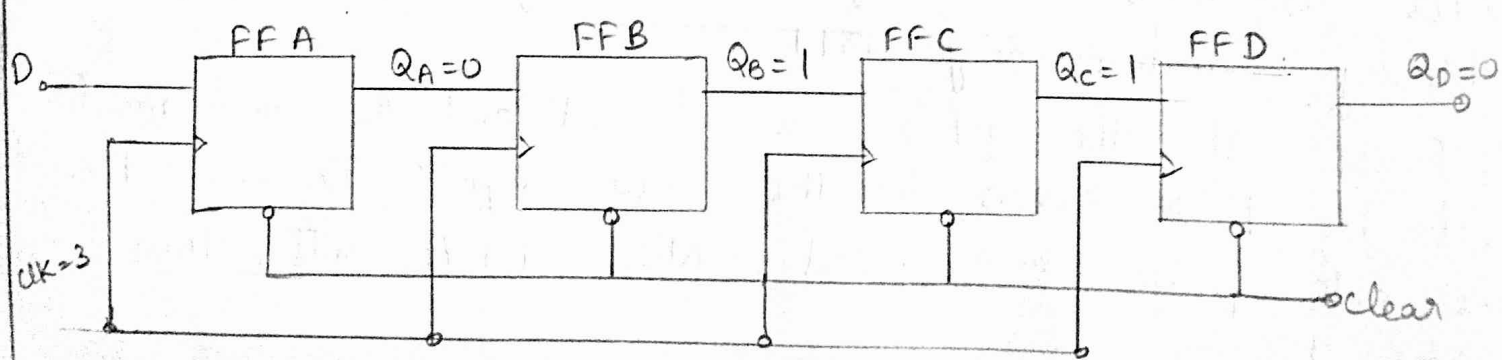
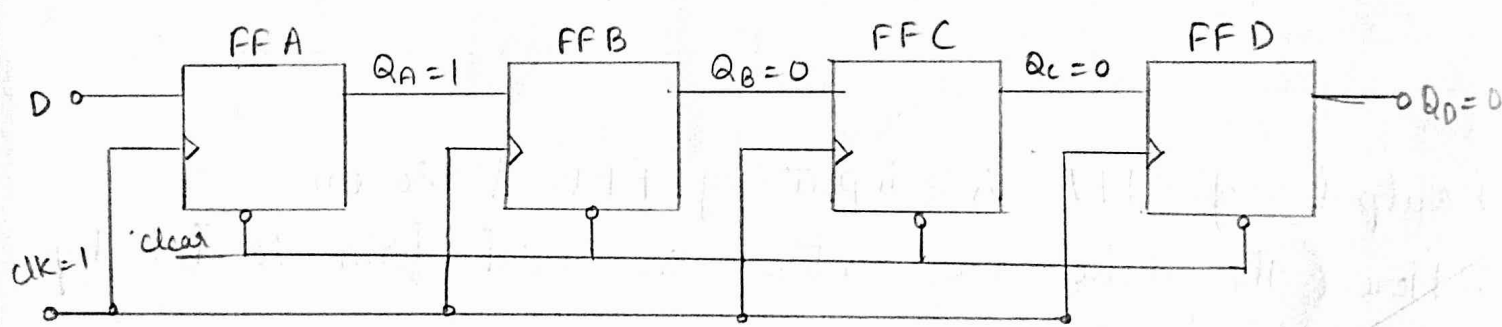
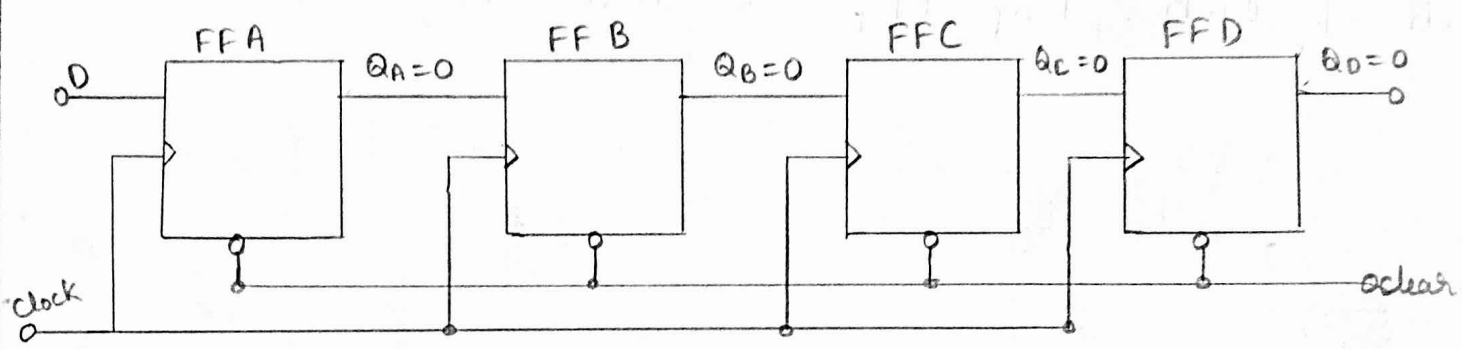
i) First all the FF's are cleared and the right most bit i.e 1 is given to the data input D and then the clk pulse is applied, Now FFA sets, thus stores 1.

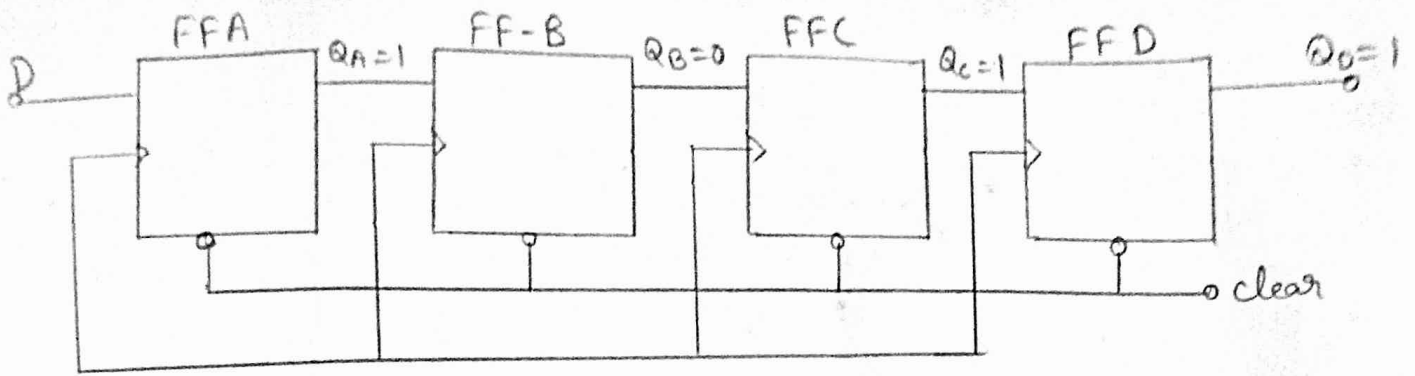
ii) Now the 2nd data bit 1 is applied to the data i/p making $D=1$ for FFA & $D=1$ for FF=B and a clock 2 i.e 2nd clock pulse is applied thus the data in FF-A is shifted to FF B.

iii) Now the 3rd bit '0' is given to the D i/p of FFA & a 3rd clock pulse is applied, Now 0 is stored in FFA and 1 is shifted to FF B.

iv) Finally the last bit 1 is given to the D i/p of FFA and 4th clock pulse is applied, Now 1 is stored in FFA and 0 in FFA is shifted to FF B, 1 in FF B is shifted to FF C & 1 in FF C is shifted FFD

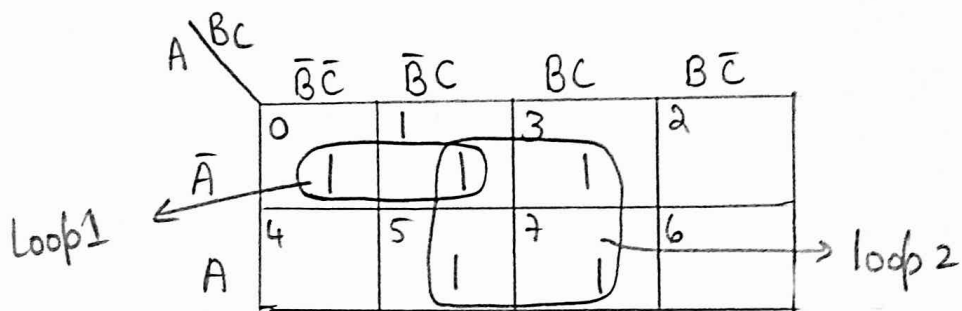
This completes the serial entry of the 4-bit number into the shift register where it can be stored for any length of time the below figure illustrate each step in the shifting of 4 bit into register.





③ Simplify using K-map $f(ABC) = \sum m(0, 1, 3, 5, 7)$ and realise final expression using basic gates.

$\Rightarrow 2^n = 2^3 = 8$ cells (0 to 7)



loop 1 :- $\bar{B}\bar{C}$, $\bar{B}C$, \bar{A}
 $C\bar{C}$ is eliminated

loop 1 expression = $\bar{A}\bar{B}$

loop 2 :- $(\bar{A}A)(\bar{B}C)(BC)$

$B\bar{B}$ & $A\bar{A}$ is eliminated

loop 2 expression = C

final simplified expression is,

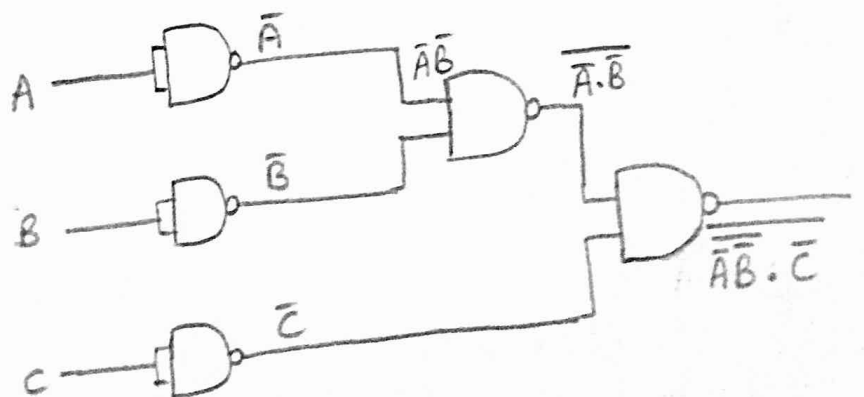
$$f(ABC) = \bar{A}\bar{B} + C$$

$$y = \bar{A}\bar{B} + C$$

$$\bar{y} = \overline{\bar{A}\bar{B} + C}$$

$$\bar{y} = \overline{\bar{A}\bar{B}} \cdot \bar{C}$$

$$\bar{y} = \overline{\bar{A}\bar{B}} \cdot \bar{C}$$



I BA OPTIONAL ENGLISH

NAMES

Assignment Topic

1st	AJAY	Renaissance
2nd	AMULYA S.	Water - Poem
3rd	ANANYA S.	Refugee Blues
4th	ANUSHKA M.	Whose English is it Anyway
5th	ANUSHA R.	I Too Sing America
6th	ARUN KUMAR R.	Work of Artifice
7th	Bi Bi NUSRATH	We Real Cool
8th	CHARAN	Dramatic Monologue
9th	DARSHAN N.	Trony
10th	DEEPASHRI	Satire

NAMES	ASSIGNMENT TOPIC
11f DEVARAJ NAIK	Plot
12f GAGAN H.	CHARACTER
13f GEETHA	Points of View
14f GOWTHAM	Narrative
15f JHANSI	Free Verse
16f KAVYA H.	RUDALI - ANALYSIS
17f MEGHANA A.	Refugee Blues
18f PAVAN NAIK.	Character of Sanichari
19f POOJA	Class and Caste System in Rudali
20f RABIYA BASRI	Sanichari as Rudali
21f REKHA T.	DANCE LIKE A MAN - ANALYSIS
22f SHAHEENA BANU	Features of Renaissance

NAMES	ASSIGNMENT TOPICS
23 SHANMUKHA	Character of Tairaj
24 SHEEBA A.	Prose Writings of Renaissance
25 SHREE LAKSHMI	Gender Discrimination in Dance like a Man
26 SINCHANA M.L.	Character of Rathna
27 SINDHU C. S.	WATER
28 SINDHURA G.S.	CHARACTER
29 SUMITHRA BAI M.	Dramatic Monologue
30 TEJASWINI G.S.	Social Construct in Dance like a Man
31 VINANTHI D.P.	Character of Bikhni
32 RAKSHITH G.S.	My Last Duchess
33 BHAVANA T.G.	Series of Death in Rudali
34 MANOJ S.V.	Irony

D.V.S COLLEGE OF ARTS AND SCIENCE

ASSIGNMENT

NAME: ANANYA. S

CLASS: B.A (H.E.E)

SUBJECT: OPTIONAL ENGLISH

TOPIC: REFUGEE BLUES

SUBMITTED TO: DEPARTMENT
OF ENGLISH

REFUGEE BLUES

- By W. H. AUDEN

Say this city has ten million souls,
Some are living in mansions, some are living in holes:
Yet there's no place for us, my dear, yet there's no
place for us

Once we had a country and we thought it fair;
Look on the atlas and you'll find it there:
We cannot go there now, my dear, we cannot go there now.

In the village churchyard there grows an old yew,
Every spring it blossoms anew:
Old passports can't do that, my dear, old passports can't
do that.

The consul banged the table and said,
"If you've got no passport you're officially dead":
But we are still alive, my dear, but we are still alive.

Went to a committee; they offered me a chair
Asked me politely to return next year:
But where shall we go to-day, my dear, but where shall
we go to-day?

Came to a public meeting; the speaker got up and said:
"If we let them in, they will steal our daily bread!"
He was talking of you and me, my dear, he was
talking of you and me.

Thought I heard the thunder rumbling in the sky;
It was Hitler over Europe, saying, "They must die!"
O we were in his mind, my dear, O we were in his
mind.

Saw a poodle in a jacket fastened with a pin.
Saw a door opened and a cat let in:
But they weren't German Jews, my dear, by they
weren't German Jews

Went down the harbour and stood upon the quay,
Saw the fish swimming as if they were free:
Only ten feet away, my dear, only ten feet away.

Walked through a wood, saw the birds in the trees;
They had no politicians and sung at their ease:
They weren't the human race, my dear, they weren't
the human race.

Dreamed I saw a building with a thousand floors.
A thousand windows and a thousand doors:

Not one of them was ours, my dear, not one of them was ours.

Stood on a great plain in the falling snow;
Ten thousand soldiers marched to and fro:
Looking for you and me, my dear, looking for you
and me.

ABOUT POET:

Wystan Hugh Auden (21 February 1907 - 29 September 1973) was a British American poet, applauded especially for his technical and stylistic achievements and for his ability to write in any form of verse. He rose to fame with 'Poems' published in the year 1930. His most notable works include 'Funeral Blues', 'September 1, 1939', 'The Age of Anxiety' and 'For the Time Being'. He won the Pulitzer Prize in Poetry in 1947 for 'The Age of Anxiety'. A man both controversial and influential Auden died in the 1973 of natural causes.

ABOUT REFUGEE BLUES:

This poem was written in 1939. The poem describes the condition of Jewish refugees during the period of Nazi Germany, with a particular emphasis on how they were discriminated against and antagonized. On the eve of World War II, the poem meditates on

the plight of Jewish refugees forced to flee Nazi Germany, but unable to find refuge elsewhere. As the poem does so, it raises broader questions about isolation, loneliness, and exile. It depicts the trauma and pain of being forced to leave home and of being unable to find a place of safety and security in a violent and uncertain world.

"REFUGEE BLUES" SUMMARY

The speaker of the poem says that the current city he is in has ten million souls. Some live in great mansions while some live in poor holes. In neither dwelling, there is a place for him and his companion.

We used to belong to a nation, and we thought it was beautiful. If you look in the atlas, you'll see it. But we can't go there anymore, my dear, we can't go there anymore. An old yew tree grows outside the village church. Every spring, it blossoms again. But our old passports don't blossom in the spring, my dear, they don't blossom in the spring. The immigration official slammed his fist down on the table and shouted, "If you don't have a passport, then you're legally dead," "But we're still living, my dear, we're still living."

I went to a committee for help and they told me to take a seat then told me to wait until

next year. But where will we go right now, my dear, where will we go right now? I went to a political rally where the speaker said: "If we let the refugees enter our country, they'll take our food." He was talking about you and me, my dear, he was talking about you and me. I thought I heard thunder in the sky. It was Hitler above Europe, saying, "They must die." He was talking about you and me, my dear, he was talking about you and me.

I saw a poodle wearing a jacket fastened with a brooch. I saw a door open to let a cat in. But these were not German Jews, my dear, they weren't German Jews. I stood on the pier down at the harbor. I saw the fish swimming there and they looked free enough. They were only ten feet away from me, my dear, only ten feet away. I went for a walk in the woods and saw birds in the trees. They don't care about the politicians; they sang freely. They weren't human beings, my dear, they weren't human beings.

In my dream, I saw a building a thousand stories tall. It had a thousand windows and a thousand doors. But not one of them belonged to us, my dear, not one belonged to us. I stood in a big field in the falling snow, while ten thousand soldiers marched back and forth, looking for us, my dear, looking for us.

Despite this direct and dire threat, the speaker cannot find refuge elsewhere. The speaker seeks asylum in an unnamed country in Europe or the Americas, but that country frustratingly turns the speaker away on a technicality: the speaker's passport is expired. An immigration official announces: "If you've got no passport you're officially dead." Without the proper documentation, the speaker is unable to enter the country, a country that could save the speaker's life.

For the speaker, this refusal is both hypocritical and cruel. It is hypocritical because the country has no trouble housing other people. As the poem opens, the speaker complains "there's no place for us, my dear", even though the "city" where they find themselves has managed to find homes for "ten million", with "mansions" for the rich and "holes" for the poor. Indeed, the inhabitants of the city seem more willing to help animals than these refugees: they give comfort and welcome to "poodle" and "cats", they even dress their dogs in fancy "jacket" to keep them warm! Thus even though they do not announce their anti-Semitism with the same force as the Nazis, their behavior reveals it: they act as though the lives of animals are more valuable to them than the lives of Jews.

And it is cruel because, without protection, the refugees face certain death. The poem closes with the

refugees standing on a "great plain in the falling snow". They have nowhere to hide. And there are "ten thousand soldiers", hunting for them. The speaker then predicts that without refuge, Jews will be slaughtered. The poem blames the soldiers for their brutality and inhumanity justifiably so, since they are pursuing and killing innocent people. But it also strongly suggests that the countries that turn the speaker away share a good deal of the blame and responsibility: they had the power to save the speaker, and failed to do so.

"Refugee Blues" is, in part, about the fear and desperation of being a refugee. The speaker is terrified of returning to Germany, but also is unable to find a safe haven elsewhere. As a result, the speaker is isolated and in limbo, trapped between countries without a clear sense of home. The speaker does not hold out hope that this situation will get better, and the poem uses the speaker's despair and frustration to convey the loneliness, pain, and sense of stagnancy that accompany exile.

Throughout "Refugee Blues", the speaker's mood is bleak and mournful. The poem begins with the speaker complaining that "there's no place for us, my dear" no safe home in any country. And no one will help the speaker: indeed, the people in the "city" would rather take in dogs and cats than Jewish refugees. The speaker thus feels friendless, profoundly lonely.

And without the possibility of finding asylum in a country like England (or) the United States, the speaker feels trapped. Even fish have more liberty than the speaker: they can at least "swim... as if they were free." At points, the speaker seems jealous of animals and birds, because they don't have to deal with hateful "politicians" they experience a kind of happiness and "ease" that the speaker no longer can.

The speaker seems to have given up on changing the minds of such politicians even though they have the power to change the laws that exclude Jewish refugees. The poem does not directly address the countries and governments that refuse to grant asylum the speaker. Instead using apostrophe, the speaker addresses another refugee, someone the speaker simply calls 'my dear'. Instead of calling for, say, specific policy reforms, the speaker simply expresses sadness and frustration. Indeed, the speaker seems to have slid into despair. For the speaker the poem is cathartic, a way for these refugees to get some of the weight of their situation off their chest. But for the reader, it has a different effect: the speaker's suffering and loneliness acts as a powerful call for action, an impassioned demand for change. By providing a window into the speaker's suffering, the poem they makes a passionate case for more just and welcoming immigration laws.

ANALYSIS:

Throughout the poem, which has 12 stanzas, the last line of each stanza contains a repetition. This is to emphasize the content of the stanza, mostly on how the Jews were discriminated against and denied basic rights. The rhyme scheme AAB gives the poem a sort of sing-song characteristic. But there is no doubt that the matter portrayed in the poem is a serious one.

This seriousness kicks in right from the first stanza which says there is no place for a Jew among the rich or the poor. One can understand there is no place in either one of the categories but when it is both, it is understood the situation is very dire. In the second stanza, 'Look at the atlas and you'll find it there,' implies that the place which the author called was for him now but a drawing on the map. It wasn't real for him anymore because there was no safety there. The dire situation of the Jews is still emphasized by the situation of their passports. There is some imagery here using a churchyard and a yew, but the point here is their passports expired and the officials weren't willing to give them new passports.

They were trapped and as the consul said, 'they were officially dead'. To be dramatic, they were dead men walking.

Further the people were against them too;

afraid that they coming would mean the native people's share would go down. There was fear everywhere in their old home, in their new refugee. There is no they can turn to nor trust. Thunder is said to be rumbling in the sky. Thunder here is the order of Hitler that all the Jews be killed. The reference is apt as thunder comes before lightning. The lightning here would be the deadly sticks and bullets aimed at the Jews. Throughout the poem, the speaker speaks to another human, presumably a female companion. He says 'my dear' repeatedly showing that he, a Jew is caring and compassionate. This emphasis on the human and loving nature of the speaker gets further sympathy from the readers for the Jews.

Central Idea of the poem Refugee Blues:

This poem gives a pretty accurate description of the situation of Jews in Hitler's rule. It is to show the people the plight of their fellow humans, and how just because they were Jews they were denied basic rights. It is an indirect appeal to show compassion by emphasizing that they were humans too, the same as the readers.

Tone of the poem:

The tone of the poem is melancholic. It is depressing and devastating. The dire plight of the Jews is presented starkly, making the readers uncomfortable, which is its idea.

CONCLUSION:

W H Auden shakes the heart of the reader by presenting the almost brutal situation of the Jewish refugees. Written in a time when the war and hunt were all real, Auden tries to get sympathy and compassion from the readers towards the Jews. He also shows the depth humans can fall to in their cruelty and how indifference too was a cruelty in itself. He shows the human nature of Jews and how they wish to be free and safe, like any other.

LITERARY DEVICES:

Every line of "Refugee Blues" is end-stopped. The poem never uses enjambement. The end-stops in the poem contribute significantly to this rhythm and, at the same time, underline the sense of isolation and exclusion the speaker feels. The end-stops contribute to the rhythm of the poem by making each line feel definite and complete. Sometimes, this emphasizes the poem's rhymes making the ring out more clearly and distinctly.

But of course, not all the lines in the poem rhyme. The third line of each stanza doesn't rhyme at all. Those lines feel lonely, isolated, cut-off. The end-stops contribute to that sense of isolation - since they work to further separate those lines from the rest of the poem.

STANZAS:

There is a total of 12 stanzas each having 3 lines in the poem.

RHYME AND RHYTHM: The rhyme scheme is AAB. The last words of the first two lines of each stanza rhyme with each other.

IMAGERY: There is some imagery when the speaker speaks of the yew in the churchyard blossoming in spring each year. "In the village churchyard there grows an old yew,
Every spring it blossoms anew."

METAPHOR: The thunder rumbling in the distance is a metaphor for the orders of Hitler which read "Kill all Jews."

REPETITION: The last line of each of the 12 stanzas has a part of it repeated in itself. For example, 'only ten feet away, my dear, only ten feet away'. This repetition is effective in emphasizing the content of the individual stanzas.

ALLUSION: There is no direct sentence stating the extent of damage done to the Jews nor is there any verse saying the speaker is speaking to a female companion. These are understood by the speaker's words and descriptions.



ಡಿ.ವಿ.ಎಸ್ ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ ಕಾಲೇಜು
ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ಶಿವಮೊಗ್ಗ

ಕನ್ನಡ ವಿಭಾಗ

ನಿಯೋಜಿತ ದತ್ತ ಕಾರ್ಯ

ಕಾರ್ಯ : ಪ್ರಶ್ನೋತ್ತರಗಳು

ಸ್ಥಳಸಲಾಗಿದೆ ಇವರಿಗೆ :

ಡಾ|| ರಣಧೀರ ಉತ್ಪಾಸಕರು ಕನ್ನಡ ವಿಭಾಗ
ಡಿ.ವಿ.ಎಸ್ ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ ಕಾಲೇಜು
ಶಿವಮೊಗ್ಗ

ವಿದ್ಯಾರ್ಥಿಯ ವಿವರ :

ಹೆಸರು : ಶರಣ್ಣ ಹೆಚ್.ಚಿರ

ತರಗತಿ : ಪ್ರಥಮ ಬಿ.ಎ [ಹೆಚ್.ಇ.ಇ]
ಕನ್ನಡ ಇಲಾಖೆ



ಡಿ.ವಿ.ಎಸ್ ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ ಕಾಲೇಜು:

ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ:

ಶಿವಮೊಗ್ಗ:

ಡಿ.ವಿ.ಎಸ್

ಕನ್ನಡ ವಿಭಾಗ:

ನಿಯೋಜಿತ ವಸ್ತು ಕಾರ್ಯ:

ಕಾರ್ಯ: ಪ್ರಶ್ನೋತ್ತರ [ಪ್ರಶ್ನೆ ಮತ್ತು ಉತ್ತರ]

ಸಲ್ಲಿಸಲಾದ ಇವರಿಗೆ:

ರಣಧೀರ್ ಸರ್ - ಕನ್ನಡ ಉಪವಿಭಾಗ

: ವಿದ್ಯಾರ್ಥಿ ವಿವರ:

ಹೆಸರು: ಕಲ್ಯಾಣ ಯೋಗಿ ಎ.ವಿ

ತರಗತಿ: ೨ ಬಿ.ಎ (HEP)

ವಿಷಯ: ಕನ್ನಡ.



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Y/a
Yc

ಡಿ. ವಿ. ಎನ್. ಕೆ.ಎ. ವಾಣಿಪ್ಪ
ಕ್ರೋಮೆ,
ಶಿವಮೊಗ್ಗ.

ಹೀರಾ. ಕೆ.ಎಂ.
ಪ್ರಭಾ. ಬಿ.ಎ.
ಹೆಚ್. ಎನ್.ಕೆ. (ಪ್ರಭಾ. ಬಿ.ಎ. ಕೆ.ಎಂ. ಕೆ.ಎಂ.)

ಕೆ.ಎಂ. ಎ.ಎಂ.
ಕೆ.ಎಂ. ಎ.ಎಂ. ಕೆ.ಎಂ.
ಎ.ಎಂ. ಎ.ಎಂ.



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ವಾಣಿಜ್ಯ ವಿಜ್ಞಾನ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಕಾಲೇಜು
ಶಿವಮೊಗ್ಗ

ಕನ್ನಡ ವಿಭಾಗ

ಕನ್ನಡ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥರು:-
ಶಾಂತಿ ಮೊಡೆ

ರೂಪ. ಬಿ.
ಪ್ರಭು. ಬಿ.ಎ
(ಎಚ್. ಎಚ್. ಕೆ)
8867484012



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ದೇಶೀಯ ವಿದ್ಯಾಶಾಲಾ
ಸೆಮಿನಾರ್(೧) ಶಿವಮೊಗ್ಗ

ಡಿ.ವಿ.ಎಸ್.ಕಲಾಕವಿಷಯ
ಕೋರ್ಸ್

ಮೆರಂದರ ಹಾಸರ ಮತ್ತು ನವಜ್ಜರ
ವಿಚಾರ ಸಾಯಿತ್ಯ

ಅಧ್ಯಯನ ಬಿ.ಎಸ್.ಸಿ.(ಉ.ಸಿ.ಎಂ)
ಬೆಂಗಳೂರು. ಕೆಆರ್



ದೋಷಿಯ ವಿದ್ಯಾಕಾಲಾನುಷ್ಠಾನ (೧)

ಡಿ.ವಿ.ಎಸ್.ಕಲಾಮತ್ತುವಿಜ್ಞಾನ
ಕಾಲೇಜು ಶಿವಮೊಗ್ಗ.

ಹೆಸರು :- ಪೂಜಾ. ಎಲ್

ಕರಗತಿ :- ಪ್ರಥಮ ಬಿ.ಎಸ್.ಸಿ [ಡಿ.ಎಂ.ಐ]

ಸೆಮಿಸ್ಟರ್ :- ಪ್ರಥಮ ಸೆಮಿಸ್ಟರ್.

ಕನ್ನಡ ನಿಯೋಜಿತದತ್ತ ಕಾರ್ಯ-೦೧



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ದೊರೆಯ
ವಿದ್ಯಾರಣ್ಯ
ಡಿ.ವಿ.ಎಸ್.ಕೆ.ಉ & ಐಐಟಿ ಕಾಲೇಜು
ಶಿವಮೊಗ್ಗ

ಕೊನೆಯ :- ಅಚಲನ.ಎಸ್
ಕರಗತಿ :- ಪ್ರಥಮ.ಬಿ.ಎಸ್.ನಿ
ಎಬಾಗ :- ವಿ.ಎಂ.ನಿ.ಎಸ್
ವಿಷಯ :- ಕನ್ನಡ



ದೋಷಿಯು ಅಧ್ಯಾಪಕರ ಸಮಿತಿಯ
ಡಿ.ಎ.ಎಸ್. ಕಲಾ ಕಿ ಎಚ್ಚಾನ
ಶಾಲೆಗೆ

ಕನ್ನಡ ಚಟುವಟಿಕೆ:-
* ಎದ್ದೆಯ ಮದಕ್ಕ

* ಸಮಾಜದ ಬಗ್ಗೆ ಲತಾ ಎ.ವೈ
ಸರಳವಾದ ಟಿಪ್ಪಣಿ. ಕ್ರಥಮ ಬಿಎಸ್ಸಿ
ಸಿ.ಬಿ.ಜೆ.ಡ.



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ದೇಶೀಯ ವಿದ್ಯಾರಾಜ ಸಮಿತಿ [೧]

ಶಿವಮೊಗ್ಗ.

ಡಿ . ವಿ . ಎಸ್ ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ

ಕಾಲೇಜು.

ಕನ್ನಡ ಚಟುವಟಿಕೆ :-

⇒ ವಿದ್ಯೆಯ ಮನವರಿಕೆ

⇒ ಸಮಾಜದ ಒಳ್ಳೆ ಸಂಸ್ಕೃತಿಯ
ಉದ್ದೇಶ

ಚಂದನ ಎಚ್.ಎಸ್

ಪ್ರಧಾನ ಲ.ಎಸ್

ಸಿ.ಬಿ.ಜಿ.



ಪ್ರಸಿದ್ಧಿಯು ವಿದ್ಯಾಶಾಲಾ
 ಸಾಮಾನ್ಯ (ಅ) ಶಿವಮೊಗ್ಗ
 ದಿ, ವಿ, ಪ್ರಸಿದ್ಧ ಕಲಾ & ವಿಜ್ಞಾನ ಕಾಲೇಜು

ಪ್ರಾಚಾರ್ಯ. ಬಿ. ಎಸ್. ಸಿ [ಡಿ, ಸಿ, ಎಸ್]
 ಹೆಚ್.ಆರ್. ಬಿ. ಎಂ.ಬಿ.ಎ



ದೇಶೀಯ ವಿದ್ಯಾಶಾಲಾ ಸಮಿತಿ (೨).

ಡಿ.ವಿ.ಎಸ್ ಕಲಾ
ಮತ್ತು ವಿಜ್ಞಾನ ಕಾಲೇಜು
ಶಿವಮೊಗ್ಗ.

- ① ವಿದ್ಯೆಯ ಮಹತ್ವವನ್ನು ಸುವಚ್ಛನ
ತ್ರಿಪದಿಗಳ ಮೂಲಕ ವಿವರಿಸಿ.
- ② ಸಮಾಜವನ್ನು ಸುಸ್ಥವಾದ ಯೋಗ್ಯವಾದ
ತುರುಂದರದಾಸರು ರೀತಿ ತಿಳಿಸಿವಾರಿ.

ಪ್ರಥಮ ಬಿ.ಎಸ್.ಸಿ (PMCS)

ನಿಂಬನ.ಬಿ.ಆರ್.



ದೊಡ್ಡಿಯ ವಿದ್ಯಾಶಾಲಾ ಸಮಿತಿಯು.

ಡಿ. ಎ. ಎಸ್. ಕಲಾ ಮತ್ತು
ವಿಜ್ಞಾನ ಕಾಲೇಜು.
ಶಿವಮೊಗ್ಗ.

- 1) ವಿದ್ಯೆಯ ಮಹತ್ವವನ್ನು ಸರ್ವಜನ ತ್ರಿಪದಿಗಳ
ಮೂಲಕ ವಿವರಿಸಿ.
- 2) ಸಮಾಜವನ್ನು ಸರಳವಾದ ಮಾತುಗಳಲ್ಲಿ
ಮುರಂಹರವಾಸರು ಯಾವ ರೀತಿ ತಿಳಿಸಿದ್ದಾರೆ.

ಪ್ರಥಮ. ಬಿ. ಎಸ್. ಸಿ [ಪಿ. ಎಮ್. ಸಿ. ಎಸ್]
ಅಕ್ಷತಾ. ಬಿ. ಈ.



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ಡಿ. ಎ. ಎಕ್ಸ್ ಕೊಡು ಮತ್ತು ವಿಜ್ಞಾನ.

ಫಲಿತು.

ಹೆಸರು :- ಸುನೀಲ್.ನಿ

ವಿಷಯ :- ವಿಜ್ಞಾನ ಕನ್ನಡ

ಅಧ್ಯಯನ :- Ist Year. B.A. (H&K)



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ಪ್ರಾಚಾರ್ಯ:-
ಯಾನೋಬ್.ಎಂ.ಎಚ್

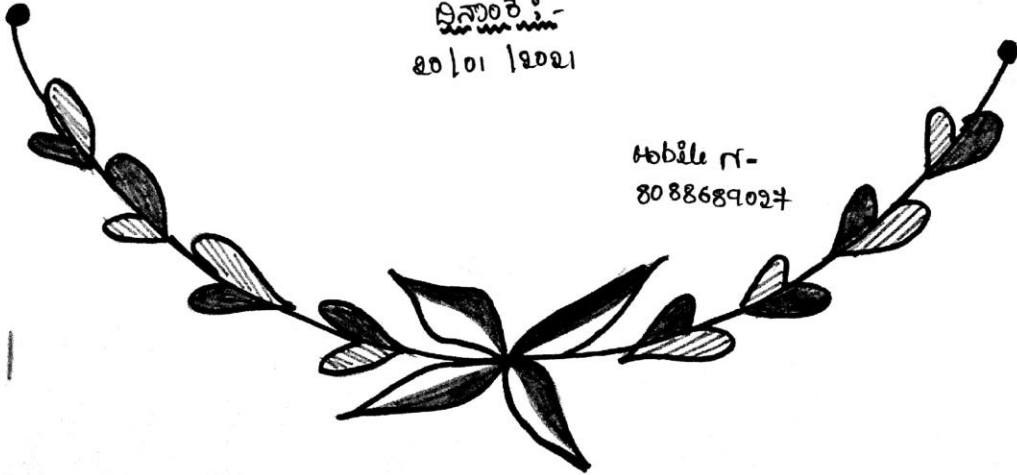
ಪ್ರಾಚಾರ್ಯ:-
ವಿಶ್ವ ಕನ್ನಡ

ಪ್ರಾಚಾರ್ಯ:-
ಗನೇ ೨೨.ಎ (H.O.K)

ಪ್ರಾಚಾರ್ಯ:-
ಡಿ.ಎ.ಎಸ್ ಕಲಾ & ಅಭಿವ್ಯಕ್ತಿ
ಶಿಬಿರಾಂಗ

ಪ್ರಾಚಾರ್ಯ:-
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ಡಿ.ವಿ.ಎಸ್ ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ ಕಾಲೇಜು
ಕುವೆಂಪು ಶಿಶುವಿದ್ಯಾಲಯ ಶಿವಮೊಗ್ಗ

ಡಿ.ವಿ.ಎಸ್

ಕನ್ನಡ ವಿಭಾಗ

ನಿಯೋಜಿತ ದಾತೃ ಕಾರ್ಯ

ಕಾರ್ಯ : ಪ್ರಶ್ನೆ ಮತ್ತು ಉತ್ತರಗಳು

ಸಲ್ಲಿಸಲಾಗಿದೆ ಇವರಿಗೆ:

ಉಮೇಶ್ ಹಿಂಗಡಿ ಉಪನ್ಯಾಸಕರು
ಸಾವಿತ್ರಿ ಉಪನ್ಯಾಸಕರು

ವಿದ್ಯಾರ್ಥಿನಿಯ ಅವರ

ಗೋಪಿಣಿ. ಎಸ್

ಪ್ರಥಮ ಬಿ.ಎ

ಹೆಚ್. ಎಸ್. ಕೆ



DVS COLLEGE OF ARTS AND SCIENCE
Sir M.V. Road, P.BNo.81, SHIVAMOGGA-577201, Karnataka

ಡಿ.ಎ.ಎಸ್ ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ ಕಾಲೇಜು
ಶಿವಮೊಗ್ಗ.

ಕನ್ನಡ ವಿಭಾಗ
ನಿಯೋಜಕ ದತ್ತ ಕಾರ್ಯ .

ಹೆಸರು : ವಿನಯ್.ಜಿ

ತರಗತಿ : I ಬಿ.ಎ (H.E.P)
'ಎ' ವಿಭಾಗ

ಇವರಿಗೆ,
ಕನ್ನಡ ವಿಭಾಗ



DVS COLLEGE OF ARTS AND SCIENCE
Sir M.V. Road, P.B.No.81, SHIVAMOGGA-577201, Karnataka

ಡಿ.ವಿ.ಎಸ್ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ
ಕಾಲೇಜು ಶಿವಮೊಗ್ಗ

ಕನ್ನಡ ವಿಭಾಗ
ನಿಯೋಜಿತ ದತ್ತ ಕಾರ್ಯ

ಕಾರ್ಯ:- ಕೃಷಿ ಮತ್ತು ಉತ್ತರಗಿಳಿ

ಸಿಲ್ಲಸಿಲಾಗಿದೆ ಇವರಿಗೆ:-
ಸೌವತ್ರಿ ಉಡುನ್ಯಾಸಿರರು

ವಿಧ್ಯಾರ್ಥಿಯ ವಿವರ:-

ಹೆಸರು:- ದೀಕ್ಷಿ.ವಿ.

ತರಗತಿ:- ಕೃಷಿ

ಬಿ.ಎ.

ಯೆಸ್.ಎಸ್.ಕೆ

DVS COLLEGE OF ^{III}
ARTS AND SCIENCE
SHIMOGGA

SUB : POLITICAL SCIENCE

FROM :-

PRAKASH .R

IV BA (HEP)

R.No : 16

REG NO :- A1714548

DVS COLLEGE OF ARTS AND
SCIENCE SHIMOGGA

To :

SURESH .SIR
POLITICAL SCIENCE
DEPARTMENT
DVS COLLEGE OF ARTS
AND SCIENCE SHIMOGGA

ಸಾರ್ವಜನಿಕ ಸತ್ಯತದ ಯುಜನಾತ್ಮಕತೆ :-

I ಸಂವಿಧಾನ ನಿಯಮ :-

(A) ಸಾರ್ವಜನಿಕ ನಿಯಮ :-

ಈ ಸಾರ್ವಜನಿಕ ಸತ್ಯತವು ಸಾರ್ವಜನಿಕವಾಗಿ 2 ಭಾಗವಾಗಿ ವಿಂಗಡಿಸಲ್ಪಟ್ಟಿರುತ್ತದೆ. ಕೆಳಕಂಡಂತಿ :-

1) ಸಾರ್ವಜನಿಕ ನಿಯಮ :-

ಅಂದಾಜು :- ಅಧಿಕಾರವು ಅಥವಾ ಸರ್ಕಾರದ ಮುಖ್ಯಸ್ಥರು ವ್ಯಾಪ್ತವಾಗಿದೆ.

2) ಸತ್ಯತ ಸಾರ್ವಜನಿಕ

ಅಂದಾಜು :- ಎಲ್ಲಾ ಅಂತಹ ಸರ್ಕಾರಿ ನಿಯಮಗಳು

ಈ ವಿಧಾನದ ಮೂಲಕವಾಗಿ

ಸರ್ಕಾರದ ಮುಖ್ಯಸ್ಥರು ಅಧಿಕಾರವು ಅಥವಾ ಸರ್ಕಾರದ

ಮುಖ್ಯಸ್ಥರು ವ್ಯಾಪ್ತವಾಗಿದೆ ಅಥವಾ ಸರ್ಕಾರದ ಅಥವಾ

ಸರ್ಕಾರದ ಅಥವಾ ಸರ್ಕಾರದ ಮೂಲಕವಾಗಿ

ಸರ್ಕಾರದ ಮೂಲಕವಾಗಿ ಸರ್ಕಾರದ ಮೂಲಕವಾಗಿ

ಸರ್ಕಾರದ ಮೂಲಕವಾಗಿ ಸರ್ಕಾರದ ಮೂಲಕವಾಗಿ

ವಿಧಾನಸಭೆ

ಕೆಲವು ಮಂತ್ರಗಳನ್ನು ಈ ಅಕ್ಷರಗಳ ಸಂಯೋಜನೆಯಲ್ಲಿ
ಯೋಜಿಸಿ ಕೊಡುತ್ತೇವೆ.

3) ಸುಖದ, ಒಂದು ಶಾಶ್ವತ ಮೂಲಕ :-

ಇದು ಕ್ರಿಯಾಶೀಲನೆಯ ಅನುಭವದ
ಲಕ್ಷಣವು. ಉತ್ತಮ ಶಾಂತಿ ಮತ್ತು ಸುಖವನ್ನು. ಈ ವಿಧವನ್ನು
ಯೋಜಿಸಿ ಉತ್ತಮ ಉದ್ದೇಶಗಳನ್ನು ನೆರವೇರಿಸಲು ಒಂದು
ಈ ಉದ್ದೇಶಗಳನ್ನು ಕೊಡುತ್ತೇವೆ. ಶಾಶ್ವತ ಸುಖವನ್ನು ಲಕ್ಷಣವು
ಇದು ಕೊಡುತ್ತೇವೆ.

4) ಸುಖದ ಶಾಶ್ವತ ಮೂಲಕ :-

ಈ ಅಕ್ಷರಗಳ ಸಂಯೋಜನೆಯಲ್ಲಿ
ಕ್ರಿಯಾಶೀಲನೆಯ ಅನುಭವದ ಲಕ್ಷಣವು. ಈ
ಲಕ್ಷಣವನ್ನು ಕೊಡುತ್ತೇವೆ. ಈ ಕೆಲವು ಮೂಲಕಗಳನ್ನು
ಯೋಜಿಸಿ ಉತ್ತಮ ಉದ್ದೇಶಗಳನ್ನು ನೆರವೇರಿಸಲು ಒಂದು
ಮೂಲಕ ಕೊಡುತ್ತೇವೆ. ಇದು ಒಂದು ಶಾಶ್ವತ ಮೂಲಕ. ಶಾಶ್ವತ
ಮೂಲಕವನ್ನು ಕೊಡುತ್ತೇವೆ.

5) ಸುಖದ ಸುಖದ ಮೂಲಕ :-

ಇದು ಕ್ರಿಯಾಶೀಲನೆಯ ಅನುಭವದ ಲಕ್ಷಣವು. ಈ
ಲಕ್ಷಣವನ್ನು ಕೊಡುತ್ತೇವೆ. ಈ ಕೆಲವು ಮೂಲಕಗಳನ್ನು
ಯೋಜಿಸಿ ಉತ್ತಮ ಉದ್ದೇಶಗಳನ್ನು ನೆರವೇರಿಸಲು ಒಂದು
ಮೂಲಕವನ್ನು ಕೊಡುತ್ತೇವೆ. ಈ ಲಕ್ಷಣವನ್ನು ಕೊಡುತ್ತೇವೆ.

ವಿಲಕೆ ಕೊಗಂಗಳ ನೆಲಾಚೆ ಆತ್ಮಕ ಸುಲ .ಕೊ
ವಾ ನಾಂತ್ರೆತಲಲ್ಲೊ ವಿಸ್ತೊಡಿ.

೧) ನಾಗರಾಕ ಶೆಂ ನಾಂತ್ರೆತಲ ವಾಕ :-

ನಾಗರಾಕ ಶೆಂ ಲಿಗಾಚಿಂವಾ
ಅಂತ್ರೆತಲ ತಕೊಂಚು ಸಿಲ ಸಿಲಕಿ ನಾಗರಾಕಿ ಶೆಂ
ತೊಂತ್ರೆತಲ ನೆಚಿವಾಚೆ . ಪೂಜಾ ವಾಕಿಂವಾ ತಲ
ತಕೊಂಚು ತಕೊಂ ನೆಚಿವಾಚು ಲಿಂವೆ ನಾಂತ್ರೆತಲ
ಆತ್ಮಕಾಚಿ ಅಂತ್ರೆತಲ.

ನಾಗರಾಕ ಆತ್ಮಕ ವಾಕ ಶಾಸನಾಚಿ ಅಂತ್ರೆತಲ :-

ನಾಗರಾಕಾ ಲಿಂವೆ ವಾಕಾ ನಾಗರಾಕಾ
ಲಿಂವೆ ವಾಕಾ ಶಾಸನ ಶಾಸನ ಲಿಂವೆ ವಾಕಾ . ಲಿಂವೆ ವಾಕಾ
ಲಿಂವೆ ತಕೊಂ ಪೂಜಾ ವಾಕಾಚಿ ಲಿಂವೆ ತಕೊಂವಾ
ಶಾಸನಾಚಿ ವಾಕಾಚಿ ಆತ್ಮಕಾಚಿ ಅಂತ್ರೆತಲ.

- : ಶಾಸನಾಚಿ ಅಂತ್ರೆತಲಿ ತಾಕಾಚಿ :-

ಲಿಂವೆ ಲಿಂವೆ ತಾಕಾಚಿ ಶಾಸನಾಚಿ
ಲಿಂವೆ ನಾಗರಾಕಾ ನಾಗರಾಕಿ ಆತ್ಮಕಾಚಿ ತಾಕಾಚಿ
ತಾಕಾಚಿ ವಾಕಾಚಿ ಅಂತ್ರೆತಲಿ ಲಿಂವೆ ವಾಕಾಚಿ
ಲಿಂವೆ

① நகரமைய சங்கம் வரலாறு :

கி.பி. 1850-ல் நகரமைய சங்கம்
 நகர சங்கம் எனும் பெயரில் நகரமைய சங்கம்
 நகர சங்கம் எனும் பெயரில் நகரமைய சங்கம்
 நகர சங்கம் எனும் பெயரில் நகரமைய சங்கம்
 நகர சங்கம் எனும் பெயரில் நகரமைய சங்கம்

② நகரமைய சங்கம் :

நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்

③ நகரமைய சங்கம் வரலாறு :

நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்
 நகரமைய சங்கம் நகரமைய சங்கம்

ಗೃಹವಲಯ ವಿದ್ಯಾ ಸಂಸ್ಥಾನದ ಲಿಖಿತವಾಗಿ ನಿರಬಂಧ
 ಪ್ರಕಾರವಾಗಿ ವ್ಯಾಪ್ತವಾದ ಉಚಿತವಾದ ವಿದ್ಯಾಭ್ಯಾಸ ವಲಯ
 ಲಿಖಿತವಾಗಿ ಕೆಲವು ಬಾರಿ ಈ ಸಂಸ್ಥಾನ ವಿದ್ಯಾ ಸಂಸ್ಥಾನ
 ವಲಯ ಉಚಿತವಾಗಿ ವಲಯ ವಿದ್ಯಾ ಸಂಸ್ಥಾನ. ಉಚಿತ
 ವಿದ್ಯಾಭ್ಯಾಸ ನಿರಬಂಧ ಲಿಖಿತವಾಗಿ ಉಚಿತವಾಗಿ
 ಉಚಿತ

9 ಬೆಳೆಸ ವಲಕ :

ಉಚಿತವಾಗಿ ವಿದ್ಯಾಭ್ಯಾಸ ವಿದ್ಯಾಭ್ಯಾಸ ಸಂಸ್ಥಾನ
 ಬೆಳೆಸನು ಕೆಲವು ಕೆಲವು ಉಚಿತವಾಗಿ ವಿದ್ಯಾಭ್ಯಾಸ
 ಉಚಿತವಾಗಿ ಉಚಿತವಾಗಿ ವಿದ್ಯಾಭ್ಯಾಸ ವಲಯವಾಗಿ
 ಬೆಳೆಸನು ಉಚಿತವಾಗಿ ವಿದ್ಯಾಭ್ಯಾಸ ವಲಯವಾಗಿ
 ವಿದ್ಯಾಭ್ಯಾಸವಾಗಿ ವಲಯವಾಗಿ, ವಲಯ ವಿದ್ಯಾಭ್ಯಾಸವಾಗಿ.

10 ಉಚಿತ ವಲಕ : & ವಲಯ ವಲಕ :

ವಲಯವಾಗಿ ವಲಯ ವಲಯವಾಗಿ
 ಉಚಿತವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ
 ಉಚಿತವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ
 ವಲಯವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ
 ವಲಯವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ ವಲಯವಾಗಿ

ವೈವಿಧ್ಯವು ಕುಶಲಕರ್ಮವು ಪ್ರಶಾಂತ ನೆಲೆ
 ತನ್ನ ವ್ಯಾಪ್ತಿ ಉದಯವು. ರಾಜ್ಯವು ಸ್ವಲ್ಪವಾಗಿ.

④ ಸಂಪದಿಯ ಸೂಚನೆ ಮೇಲೆ :-

ಸುಖವು ರಾಜಕೀಯವು
 ದೇಶದ ಮೇಲೆ ಕೊಡು ಕೊಡು ಸುಖವು
 ಕಾಲ ಕೊಡು ಉದಯವು. ಕಾಲ ರಾಜಕೀಯ
 ತನ್ನ ಸುಖವು ಸುಖವು ಸುಖವು ಸುಖವು
 ಸುಖವು ಸುಖವು ಸುಖವು ಸುಖವು

- ① ಕೊಡು ಸುಖವು
- ② ಸುಖವು ಸುಖವು
- ③ ಸುಖವು ಸುಖವು
- ④ ಸುಖವು ಸುಖವು
- ⑤ ಸುಖವು ಸುಖವು
- ⑥ ಸುಖವು ಸುಖವು

-: ಸುಖವು ಸುಖವು :-

ಸುಖವು ಸುಖವು ಸುಖವು ಸುಖವು
 ಸುಖವು ಸುಖವು ಸುಖವು ಸುಖವು

ಕೆಲವು ಉದಾಹರಣೆ ಕೆಳಕಂಡಂತಿವೆ. ಈ ಕೆಳಕಂಡಂತಿವೆ
 ಸಮಯ ಸಮಯದ ಉದಾಹರಣೆ ಕೆಳಕಂಡಂತಿವೆ
 ಅಧಿಕಾರ ಮತ್ತು ಸಾಮಾನ್ಯತೆ ದತ್ತ ಉದಾಹರಣೆ
 ಸಾಮಾನ್ಯತೆ ಸಮಯ.

ಆತ್ಮಕಲ್ಪನಾ ನಿಯಮಗಳ ಪ್ರವೇಶದಿಂದಾಗಿ

ಸಂದರ್ಭಗಳು :-

ಇವು ಸಂದರ್ಭಗಳ ನಿಯಮದ
 ಸಮಯದ ಆತ್ಮಕಲ್ಪನಾ ನಿಯಮದ ಉದಾಹರಣೆ
 ವಿಷಯ ಕೆಳಕಂಡಂತಿವೆ. ಈ ಕೆಳಕಂಡಂತಿವೆ
 ವಿಷಯ

- ① ಕೆಳಕಂಡಂತಿವೆ
- ② ಕೆಳಕಂಡಂತಿವೆ
- ③ ಕೆಳಕಂಡಂತಿವೆ
- ④ ಕೆಳಕಂಡಂತಿವೆ
- ⑤ ಕೆಳಕಂಡಂತಿವೆ

∴ ನಿಯಮದ ಸಂದರ್ಭದ ಸಂದರ್ಭ :-

- ① ನಿಯಮದ ಸಂದರ್ಭ :-

ಪ್ರಕಾರ ೦೧ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಒಂದೇದೇ
ಪ್ರಕಾರ ಒಂದೇ ಪ್ರಕಾರ ತುಂಬ ಪ್ರಕಾರ ಈ ಪ್ರಕಾರ
ಪ್ರಕಾರ ಪ್ರಕಾರಕ್ಕೆ ಸಂಬಂಧವು.

③ ಸಂಪನ್ಮೂಲ :-

ಪ್ರಕಾರವಿಧಿ ವಿಧಿ ಒಂದೇದೇ
ಪ್ರಕಾರವೂ ಪ್ರಕಾರಕ್ಕೆ ಒಂದೇದೇ
ಪ್ರಕಾರವೂ ೦೧ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ
ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಈ ಪ್ರಕಾರವೂ
ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ.

④ ಪ್ರಕಾರವೂ :-

ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ
ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ
ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ
ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ

⑤ ಪ್ರಕಾರವೂ :-

ಈ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ
ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ ಪ್ರಕಾರವೂ

ಕ್ರಮವಾಗಿ ನಾನು ಕೆಲವು ದೃಶ್ಯಾತ್ಮಕ ಚಿತ್ರಗಳನ್ನು
 ಈ ರೀತಿ ಲೇಖನ ಮಾಡಿ ನೋಡುತ್ತೇನೆ. ಕೆಲವು
 ಲೇಖನಗಳನ್ನು ನೋಡಿ ವ್ಯಕ್ತಿತ್ವವನ್ನು ಕಂಡು ಬರಬೇಕೆಂದು
 ನಾನು ಹೋಗಿದ್ದೇನೆ. ಈ ಕ್ರಮವಾಗಿ ನೋಡುತ್ತೇನೆ
 ಕೆಲವು ನೋಡುತ್ತೇನೆ.

-: ಸಾಮಾನ್ಯ ಚಿತ್ರಗಳ ಮೇಲೆ ಚಿತ್ರನಿರೀಕ್ಷೆ :-

ಲೇಖನ ಲೇಖನವನ್ನು ನೋಡಿ
 ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ
 ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ
 ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ
 ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ ಕೆಲವು ನೋಡಿ

1 ಚಿತ್ರನಿರೀಕ್ಷೆ :-

ಚಿತ್ರನಿರೀಕ್ಷೆ ಲೇಖನವನ್ನು
 ಚಿತ್ರನಿರೀಕ್ಷೆ ಲೇಖನವನ್ನು
 ಚಿತ್ರನಿರೀಕ್ಷೆ ಲೇಖನವನ್ನು
 ಚಿತ್ರನಿರೀಕ್ಷೆ ಲೇಖನವನ್ನು
 ಚಿತ್ರನಿರೀಕ್ಷೆ ಲೇಖನವನ್ನು
 ಚಿತ್ರನಿರೀಕ್ಷೆ ಲೇಖನವನ್ನು
 ಚಿತ್ರನಿರೀಕ್ಷೆ ಲೇಖನವನ್ನು

② ಪ್ರಜಾಪ್ರಭುತ್ವದ ಮೂಲಕ :-

ಈ ವಿಧಾನವನ್ನು ಪ್ರತಿ ಸ್ತ್ರೀ ಪ್ರತಿ
 ಪ್ರಭುತ್ವದ ಮೂಲಕವೂ ಸಹಾ ಸ್ತ್ರೀಯರ ಹಿತವನ್ನು ಕಾಪಾಡಲು
 ಪ್ರತಿ ಸ್ತ್ರೀಯರ ಬಾಂವರ ನಿಕರಣದ ಮೂಲಕ ಸರ್ಕಾರದ
 ಮೂಲಕ - ಶಿಕ್ಷಣ ಮತ್ತು ಸಂವಿಧಾನದ ಮೂಲಕವೂ ಸಹಾ ಪ್ರತಿ
 ಸ್ತ್ರೀಯರ ಹಿತವನ್ನು ಕಾಪಾಡಲು ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ
 ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ

③ ಪ್ರಜಾ ಸಂವಿಧಾನದ ಮೂಲಕ :-

ಜನರ ಸ್ವಾಭಾವಿಕ ಹಕ್ಕುಗಳನ್ನು
 ರಕ್ಷಿಸುವುದು ಮತ್ತು ಸಂವಿಧಾನದ ಮೂಲಕವೂ ಸಹಾ
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ

④ ಹಿಂದಕ್ಕೆ ಕರೆಸಿಟ್ಟುಕೊಳ್ಳುವ ಮೂಲಕ :-

ಪ್ರತಿ ಸ್ತ್ರೀಯರ ಹಿತವನ್ನು
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ
 ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ ಸರ್ಕಾರದ ಮೂಲಕವೂ ಸಹಾ

ಸಹಜವಾಗಿಯೇ ಜ್ಞಾನ ಸಾಧನವಾಗಿ ಉಪಯುಕ್ತವಾದ
 ಉಪಯುಕ್ತವಾದ ಜ್ಞಾನ ಸಾಧನವಾಗಿ ಉಪಯುಕ್ತವಾದ
 ಉಪಯುಕ್ತವಾದ ಜ್ಞಾನ ಸಾಧನವಾಗಿ ಉಪಯುಕ್ತವಾದ

⑤ ಸುಖ ಸುಖವಾಗುವ ಮಾರ್ಗ :-

ಸುಖ ಸುಖವಾಗುವ ಮಾರ್ಗವೆಂದರೆ
 ನಮ್ಮ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ ಮಾರ್ಗವೆಂದರೆ
 ನಮ್ಮ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ ಮಾರ್ಗವೆಂದರೆ
 ನಮ್ಮ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ ಮಾರ್ಗವೆಂದರೆ
 ನಮ್ಮ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ ಮಾರ್ಗವೆಂದರೆ

⑥ ಒತ್ತಡ ಸಂವಹನ ಮತ್ತು ಯೋಗ್ಯ ಸಂವಹನ
 ಮಾರ್ಗ :-

ಈ ಒತ್ತಡ ಸಂವಹನ ಮತ್ತು ಯೋಗ್ಯ ಸಂವಹನ
 ಸಂವಹನ ಮಾರ್ಗವೆಂದರೆ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ
 ಮಾರ್ಗವೆಂದರೆ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ
 ಮಾರ್ಗವೆಂದರೆ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ
 ಮಾರ್ಗವೆಂದರೆ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ
 ಮಾರ್ಗವೆಂದರೆ ಮನಸ್ಸನ್ನು ಸುಖವಾಗಿಸುವ

Nalina. B. &

III BA [HSP]

Political Science

DV & college of Arts & Science

Shimogga

Roll No : 42

Exam Registra No : AN714540

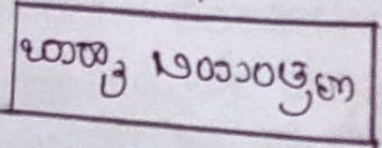
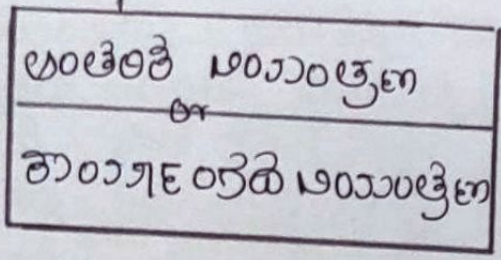
Submitted to : 0

R. Suresh Sir

DV & college of Arts &
and Science Shimogga



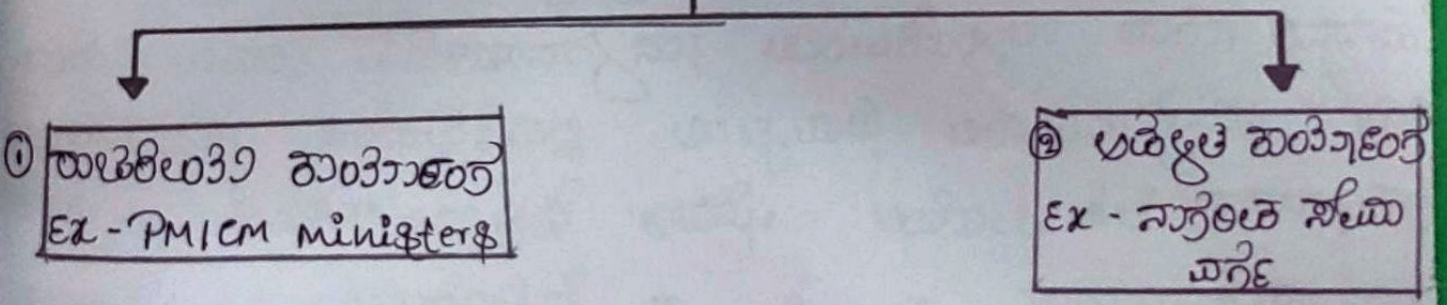
* ಸಾರ್ವಜನಿಕ ಬಡ್ಡಿಯ ವರ್ಗೀಕರಣ : 0



- 1 ಶಾಸನಾಂಗ ಅನುಬಂಧಗಳು
- 2 ಸ್ವಯಂಸಹಾಯ ಅನುಬಂಧಗಳು
- 3 ಒಳಾಂಗ ಅನುಬಂಧಗಳು

- 1 ರಾಜಕೀಯ ಅನುಬಂಧಗಳು
- 2 ಉಚಿತ ಸಹಾಯ ಯೋಜನೆ
- 3 ನವೀಕರಣ ಕಾರ್ಯ ಯೋಜನೆ
- 4 ಸೌಕರ್ಯಗಳನ್ನು
- 5 ದಿವ್ಯ ಪರಿಷ್ಕರಣೆ ಯೋಜನೆ
- 6 ನಾಗರಿಕ ಸೇವಾ ಯೋಜನೆ
- 7 ಯೋಜನಾ ಅನುಬಂಧಗಳು
- 8 ಸೇವಾ ಯೋಜನೆ
- 9 ಕಾರ್ಯಾಚರಣೆ ಅನುಬಂಧಗಳು

* ಸಾರ್ವಜನಿಕ ಬಡ್ಡಿಯ ಅನುಬಂಧಗಳ ಉಚಿತ ಅನುಬಂಧಗಳು ಮತ್ತು ಕಾರ್ಯಾಚರಣೆ ಅನುಬಂಧಗಳು



ಸಾವಿರದೊಳಗೆ ಬಿಡುಗಡೆ ಮಾಡಿದ ಹೊಸ ಸಂವಿಧಾನ ೨೦೧೬ರ ಅನುಚಿತ

ಸಾಧನಗಳು :-

- ೧. ಶಾಸನ ಸಭೆಯು ಯಾವುದೇ
- ೨. ಪ್ರಜಾಪ್ರಭುತ್ವದ ಹಕ್ಕುಗಳನ್ನು ಯಾವುದೇ
- ೩. ಶಾಂತಿ ಹಕ್ಕುಗಳನ್ನು ಯಾವುದೇ
- ೪. ಚೇತನಕ್ಕೆ ಯಾವುದೇ
 - ಅ. ಉಚಿತವಾಗಿ ಚೇತನಕ್ಕೆ
 - ಆ. ಉಚಿತ ರಿಟಿಂಗ್ ಚೇತನಕ್ಕೆ
 - ಇ. ಇತರ ಚೇತನಕ್ಕೆ ಯಾವುದೇ
 - ೧. ಶಾಂತಿ ಸಭೆಯಿಂದ ಘೋಷಿಸಿದ ಹೊಸ ಚೇತನಕ್ಕೆ
 - ೨. ಉಚಿತ ಸಭೆಯಿಂದ ಯಾವುದೇ ರೀತಿಯಲ್ಲಿ ಸಾಧಾರಣ ಚೇತನಕ್ಕೆ
- ೫. ಶಾಂತಿ ಸಭೆಯಿಂದ ಸಾಧಾರಣ ಯಾವುದೇ
- ೬. ಯಾವುದೇ ಶಾಂತಿ ಸಭೆಯಿಂದ ಯಾವುದೇ
- ೭. ಉಚಿತ ಸಭೆಯಿಂದ ಯಾವುದೇ
- ೮. ಯಾವುದೇ ಸಭೆಯಿಂದ ಯಾವುದೇ
- ೯. ಆರ್ಟಿಕಲ್ ೩೨೫ನಿಂದ ಯಾವುದೇ ಯಾವುದೇ
- ೧೦. ಸಂಸತ್ತಿನ ಸಭೆಯಿಂದ ಯಾವುದೇ
 - ಅ. ಸಾವಿರದೊಳಗೆ ಆರ್ಟಿಕಲ್ ೩೨೫ನಿಂದ ಸಭೆಯ
 - ಆ. ಯಾವುದೇ ಸಭೆಯ
 - ಇ. ಸಾವಿರದೊಳಗೆ ಯಾವುದೇ ಹೊಸ ಸಭೆಯ
 - ಈ. ಯಾವುದೇ ಸಭೆಯಿಂದ ಯಾವುದೇ ಸಭೆಯ
 - ಉ. ಯಾವುದೇ ಸಭೆಯ

4) ಶಾನಿವಾರ್ ಎರವು ಉಗ ನೆಹಣ ಶೆಂಠೆಗ : 0

ಅಕ್ಷೇಪವಲ್ಲ ಶಾನಿವಾರ್ ಮೊಟ್ಟೆಯೆರಿಯೆ. ಖಲಾ ಖಾ
ಅನಿಯಾಗ್ಯ ಶಾಂಶೀ ಅಣುನಿಶಿಯು ಅಷ್ಟೆ ಮೊಟ್ಟೆ ಅಶೀಪೆ.
ಅಶೀಪಿಗ್ಯ ಇದಿಶೆ ಅನಿಶೀಯಗ ಶಾಂಶೀ ಅಶೀಪಿಗ್ಯ.
ಇದಿಶೆ ಅಶೀಪಿಗ್ಯ ಶಾಂಶೀ ಅಶೀಪಿಗ್ಯ. ಅಶೀಪಿಗ್ಯ ಅಶೀಪಿಗ್ಯ.
ವೆನಿಶೀ. ಈ ಸಂಯುಕ್ತ ಸ್ವಾಂಶೀಯದ ಮಾರ್ಪೆ ಮೊಟ್ಟೆ ಅನಿಯಾಗ
ಅಂತಿಹಿ ತ್ರಿಶೀಪೆ ಅಶೀಪಿಗ್ಯ ಅಶೀಪಿಗ್ಯ ಅಶೀಪಿಗ್ಯ ಅಶೀಪಿಗ್ಯ
ವೆನಿಶೀ.

* ಸ್ವಾಂಶೀಯದ ಅಂಶೀಯ ಸಾಧನಗ್ಯ : 0

- 1) ಸ್ವಾಂಶೀ ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ
- 2) ಶಾನಿವಾರ್ ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ
- 3) ಸಿಶೀಪಿಗ್ಯ ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆಗ್ಯನು ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ
- 4) ಸಶೀಪಿಗ್ಯ ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆಗ್ಯನು ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ
- 5) ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆಗ್ಯನು ಮೊಟ್ಟೆ [ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ]

a) Hebeas corpus - ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ

b) Mandamus - ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ

c) Prohibition - ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ

d) Certiorari - ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ

e) Quo-warranto - ಅಶೀಪಿಗ್ಯ ಮೊಟ್ಟೆ

f) ಇಂಪೀಡ್ಶನ್ - Injunction.

① ಸ್ವಾಂಖಶೆ ಯಾರ್ಶೆಂ : ಸ್ವಾಂಖಶೆ ಯಾರ್ಶೆಂ ಎಂವೆರೆ ಸೆರ್ತಾಶೆಂ
 ಶಾಸೆಂಶಾಂ ಶಿಖಾಶೆಂ ಶಾನಿವಾಸಿಂನ್ಯೆ ಬರ್ಗ್ಗೆಂ ಭಯ್ವ್ಯೆ ಸೆಂಯಾಂ
 ಬಹ್ಯೆತೆಯಾನ್ಯೆ ಗೊರೊಶಿಲಾ ಸ್ವಾಂಖಶೆಂನಿಂ ನೆಹೆಶಿಂವೆ ಯಾರ್ಶೆಂ
 ಬಗ್ಗೆಂ. ಐಗಾಂ ಕು ಯಾರ್ಶೆಂನಿಂ ಸೆಂಹೆಂವೆಲ್ಲೆ ಲಾಖಿಂವಾನ್ಯೆ
 ಗೊರೊಶಿಲಾಗಿದೆ.

② ಶಾನಿವಾಸಿಂ ಬಹ್ಯೆ ತಿಂನಿಂವಾನ್ಯೆ ತಿಂನಿಂವಾನ್ಯೆ :
 ಸೆರ್ತಾಶೆಂ ಶಾನಿವಾಸಿಂನಿಂ ಸೆಂಯಾಂನಿಂವೆ, ಯಾರ್ಶೆಂವಾನ್ಯೆ
 ಹುಯೆ ತಿಂನಿಂವಾನ್ಯೆ. ಉಂ ತೆಂವೆಂವೆಂ ಬಗ್ಗೆಂವೆ ತಿಂನಿಂವಾನ್ಯೆ
 ಸ್ವಾಂಖಶೆಂನಿಂ ಶಾನಿವಾಸಿಂ ಬಹ್ಯೆ ತಿಂನಿಂವಾನ್ಯೆ ಸ್ವಾಂಖಶೆಂನಿಂ
 ಸ್ವಾಂಖಶೆಂನಿಂ ಸ್ವಾಂಖಶೆಂನಿಂ ಸ್ವಾಂಖಶೆಂನಿಂ ಸ್ವಾಂಖಶೆಂನಿಂ

③ ಸೆರ್ತಾಶೆಂ ಬಹ್ಯೆತೆಯಾನ್ಯೆ ಯಾರ್ಶೆಂವೆಂವೆಂ ತಿಂನಿಂವಾನ್ಯೆ
 ತಿಂನಿಂವಾನ್ಯೆ : ಉಂವೆಂವೆಂ ಸೆರ್ತಾಶೆಂ ನೆರ್ತಾಶೆಂನಿಂ ತಿಂನಿಂವಾನ್ಯೆ
 ಸೆರ್ತಾಶೆಂ ಸೆಂಹೆಂವೆಲ್ಲೆ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ವೆರ್ತಾಶೆಂ ಸೆರ್ತಾಶೆಂ
 ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ
 ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ
 ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ
 ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ ತಿಂನಿಂವಾನ್ಯೆನಿಂ

④ ಯಾರ್ಶೆಂ ತಿಂನಿಂವಾನ್ಯೆ ತಿಂನಿಂವಾನ್ಯೆ :
 ಸಾಂಖಶೆಂನಿಂವಾನ್ಯೆ ಉಂವೆಂವೆಂವೆಂ ನೆರ್ತಾಶೆಂನಿಂ ಸೆರ್ತಾಶೆಂನಿಂ
 ಬಹ್ಯೆತೆಯಾನ್ಯೆ ತಿಂನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆ ತಿಂನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆ
 ಸಾಂಖಶೆಂನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂ
 ತಿಂನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂವಾನ್ಯೆನಿಂ

6) ಒತ್ತಿಡೆ ಗೊತ್ತುಯ್ಯ ಯಾಬರೆ

7) ತಲಜಿ ತಿಪುತುಯ್ಯ ಯಾಬರೆ

8) ಕಾಚಿಲಯಾ ಪುಟ್ಟಯ್ಯ ಯಾಬರೆ

9) ಸಾವಣಬರೆ ಬುಕ್ಕುಯ್ಯಾಯ ಯಾಬರೆ

1) ಚೊನಾಯಿನ್ಯ ಯಾಬರೆ : ಚೊನಾಯಿನ್ಯನಿೞು ತ್ರಿಪ್ರಾಪ್ರಿಫುಟ್ಟುಡ
ಬೆಂಬಲವಿೞು ಯಿನ್ನಿಬಾಗುತೆವ್. ತ್ರಾಪು ತ್ರಾಪ್ರಿಫುಟ್ಟುಡ ಕಾಪ್ಪುಗ್ಗುಲ್ಲ ತ್ರಾಪ್ರಿಫುಟ್ಟು
೦೮ ಪೆರಾಯಿಪಿಪಿ ಸೆಶೀರಗ್ಗು ಚೊನಾಯಿ ಸೆಡುತೆವ್ ಡಾಗಾ.
ಸೆಶೀರಗ್ಗು ಸೆಂಪಿಠಾಣ ಡಾಗಾ ಸುಪಿಪುಚೆ, ಚಪಾಪ್ಪುಠಂಪುಗಿರೀಚಿ
ಒಪ್ಪು ವೆಲ್ಲೆ ಸೆಪಿಠಾಚ ಡಾಗಾ ಚನತೆ ಬರೆಪುಪುಟ್ಟುಗ್ಗು ಸೆಶೀರ
-ಗ್ಗು ಅರೀಡುಯಾಗ ರೀಪುಠ ಲಕಿಣ್ಣಸಾಯಿಪು.

2) ತ್ರಾಪು ಲಕಾಣರೆ ಯಾಬರೆ : ಈ ಲಕಾಣನಿೞು ತ್ರಾಪ್ರಿಫುಟ್ಟು
ಡಾಗಾ ತ್ರಾಪು ತ್ರಾಪ್ರಿಫುಟ್ಟುಡ, ಬುಕ್ಕು ರಾಲ್ಲ ಐರೀಪೆ ಸೆಪಿ ದೇಶಪಲ್ಲ
ಶೆಣ ಬಪ್ಪಿಪು. ತ್ರಾಪು ಲಕಾಣರೆ ಂಪು ಸುಪಿಪುಚಿ ಯಾಚಿಲ
ಬಂಪುಪಿರೀಪಿ ಪುಪು - ಪುಪು ೦೮ ಸಂಪುಪುನಕೆ ತ್ರಾಪ್ರಿಫುಟ್ಟು
-ನಿೞು ತ್ರಾಪುಗ್ಗು ತ್ರಾಪ್ರಿಫುಟ್ಟುಡ ಬೆಪಿಠೆ ೦೮ ಬೆಪಿಪಿ ಂಪುಪುನಿೞು
ಚೊನಾಯಿನ್ಯ ಯಾಬರೆ ತ್ರಾಪ್ರಿಫುಟ್ಟು ಲಕಾಣರೆಪಲ್ಲ ಆಪ್ಪುಸೆಪುಪು.

3) ತ್ರಾಪು ಲಕಾಣರೆ ಪದೇಶನಕೆ ಯಾಬರೆ :
ಚನಿರೀ ಸೆಪಿಠಾಚೆ, ಬಗಿಪ್ಪು ಅರೀಪೆ ಪುಪುನಿೞುನಿೞು ರೀಪುಪು
-ಪು ೦೮ ತಿಪುಪುನಿೞು, ತ್ರಾಪ್ರಿಫುಟ್ಟುಡ ಯಾಚಿಲಂಪೆ
ಸೆಶೀರಕೆ, ಪದೇಶನನಿೞು- ಶೆಪುಪುಪುಪು ಪಗಿಪೆ. ಈ ಲಕಾಣ
-ಪು ಸೆಪಿಠೆ ಲಕಾಣಕೆ ಯಾಬರೆ ಬಂಪುಪುತೆಪ್ಪು.

൧) ഞാൻ്റെ ഭിന്നിതവ്യക്തിത്വം

ശ്രദ്ധ ക്രമീകരിക്കുന്നതിനായി ഓരോരുത്തർക്കും
ഓരോരുത്തർക്കും ക്രമീകരിക്കുന്നതിനായി സഹായകരമായ
അതിനായി സഹായകരമായ ക്രമീകരിക്കുന്നതിനായി
കാർഷിക മേഖലയിൽ കർഷകർക്കും മറ്റും
കൃഷി മേഖലയിൽ കർഷകർക്കും മറ്റും

൨) ^{സംഗ്രഹം} സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം
ഏകദേശം ൧൦൦൦ സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം
-യാനം സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം
പ്രകാരമുള്ള സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം
സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം
അതിനായി സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം
പ്രകാരമുള്ള സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം
പ്രകാരമുള്ള സംഗ്രഹം സംഗ്രഹം സംഗ്രഹം

ಡಿ.ವಿ.ಸಿ. ಕಲಾ ಮತ್ತು ವಿಜ್ಞಾನ ವಿಭಾಗ

ಕಾಲೇಜು ಶಿವಮೊಗ್ಗ.

ರಾಜ್ಯಶಾಸ್ತ್ರ (Political Science)

ನಿಯೋಜಿತ ದತ್ತ ಕಾರ್ಯ - (1)

Assignment - (1)

ವಿಷಯ :- ರಾಜ್ಯಶಾಸ್ತ್ರ ಅಧ್ಯಯನದ ವಿಧಾನಗಳು.

ಇಂದ, :- ಪವನ.ಬಿ
ಪ್ರಥಮ ಬಿ.ಎ. ಹೆಚ್.ಎಸ್.ಡಿ. (HSP)
ದಾಖಲಾತಿ ಸಂಖ್ಯೆ 8- 98.

ಗೆ, :- ರಾಜ್ಯಶಾಸ್ತ್ರ ವಿಭಾಗ.
(Department of Political Science).

ರಾಜ್ಯಶಾಸ್ತ್ರ ಅಧ್ಯಯನದ ವಿಧಾನಗಳು

ನಿಗಮನ ವಿಧಾನ

ಅನುಗಮನ ವಿಧಾನ

1). ತಾತ್ವಿಕ / Philosophical

1). ಔಪಚಾರಿಕ ವಿಧಾನ

2). ಪ್ರಾಯೋಗಿಕ ವಿಧಾನ

3). ಅವಲೋಕನ ವಿಧಾನ

4). ಕೌಟುಂಬಿಕ ವಿಧಾನ

5). ವರ್ತನಾ ವಿಧಾನ

ಪರಿಚ್ಛೇದ 1 - ಸಮಾಜ ವಿಜ್ಞಾನಗಳು & ಪ್ರಾಕೃತಿಕ ವಿಜ್ಞಾನಗಳು ಕೆಲವು ಮೂಲಭೂತ ತತ್ವ ಅಥವಾ ನಿಯಮಗಳ ಅನ್ವೇಷಣೆಯ ಲಕ್ಷ್ಯವನ್ನು ಹೊಂದಿರುತ್ತವೆ. ಪ್ರತಿಯೊಂದು ವಿಜ್ಞಾನವು ಲಕ್ಷ್ಯವೇ ಸಾಧನೆಗೆ ವಿವಿಧ ಅಧ್ಯಯನ ವಿಧಾನ ಅಥವಾ ಪದ್ಧತಿಗಳನ್ನು ಅನುಸರಿಸುತ್ತದೆ. ಎಲ್ಲ ವಿಜ್ಞಾನಗಳ ಸಂಶೋಧನೆಯ ಲಕ್ಷ್ಯವೇ ವ್ಯಕ್ತಿತ್ವವನ್ನು ಕಂಡುಹಿಡಿಯುವುದೇ ಆಗಿರುತ್ತದೆ. ಈ ವ್ಯಕ್ತಿತ್ವವೇ ಕಂಡುಹಿಡಿಯಲು ಅನುಸರಿಸುವ ಮಾರ್ಗಗಳು ಅಥವಾ ಸೂತ್ರಗಳನ್ನು ಅನುಸರಿಸುವುದಕ್ಕೆ ಅಧ್ಯಯನ ವಿಧಾನ ಅಥವಾ ಪದ್ಧತಿ ಅಥವಾ ಪದ್ಧತಿಗಳು ಎಂದು ಕರೆಯಲಾಗುತ್ತದೆ. ಅಂದರೆ, ಒಂದು ನಿರ್ದಿಷ್ಟ ಘೋಷಣೆಯನ್ನು ಪಡೆಯಲು ನಡೆಸುವ ಕ್ರಮವನ್ನು ಸಂಶೋಧನಾ ಮಾರ್ಗವೇ ಅಧ್ಯಯನ ವಿಧಾನ.

ರಾಜ್ಯ & ಸರ್ಕಾರಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ವಸ್ತು - ವಿಷಯವನ್ನು ಹೊಂದಿರುವ ರಾಜ್ಯಶಾಸ್ತ್ರವನ್ನು ರಾಜಕೀಯ ವಿಜ್ಞಾನ (political science) ಎಂದು ಕರೆಯಲಾಗುತ್ತದೆ. 19 ನೇ ಶತಮಾನದ ಮೊದಲೇ ರಾಜಕೀಯ ವಿಜ್ಞಾನಗಳು ರಾಜ್ಯಶಾಸ್ತ್ರದ ಅಧ್ಯಯನದ ವಸ್ತು - ವಿಷಯವಾದ 'ರಾಜ್ಯ'ವನ್ನು ವೈಜ್ಞಾನಿಕ ದೃಷ್ಟಿಕೋನದಿಂದ ಅಧ್ಯಯನ ಮಾಡಲು ಪ್ರಯತ್ನಿಸಿದ್ದರು. ಪೂರ್ವ ರಾಜಕೀಯ ವಿಜ್ಞಾನಗಳು ರಾಜ್ಯ & ಸರ್ಕಾರದ ಸಮಸ್ಯೆಗಳನ್ನು ಅಭ್ಯಸಿಸಲು & ವಿಮರ್ಶಿಸಲು ವಿವಿಧ ವಿಧಾನಗಳು ಅಥವಾ ಪದ್ಧತಿಗಳನ್ನು ಅನುಸರಿಸುವ ಮೂಲಕ ವಿವಿಧ ಪದ್ಧತಿಗಳನ್ನು

ನಿಗಮನ ಪದ್ಧತಿ ೧-

ನಿಗಮನ ಪದ್ಧತಿಯಲ್ಲಿ ಸಾಮಾನ್ಯ (ಸರ್ವತ್ರ) ನಿಯಮವಾದ ಅನಿಷ್ಟ ತತ್ವಕ್ಕೆ ಬಲಗುತ್ತದೆ. ಈ ನಿಗಮನ ಪದ್ಧತಿಯಲ್ಲಿ ಅಧಾನವನ್ನು ಗುರುತಿಸಲಾಗಿದೆ. ಅದಾದರೆ, ತ್ವರಿತ ಅಧಾನ.

೧ ತ್ವರಿತ ಅಧಾನ (Philosophical Approach):

ರಾಜ್ಯಶಾಸ್ತ್ರದ ವಸ್ತು - ಅಡಿಯಗಳನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು ತ್ವರಿತ ಅಧಾನವನ್ನು ಬಳಸಲಾಗುತ್ತದೆ. ಈ ಅಧಾನವು ನಿಗಮನ (Deductive) ಪದ್ಧತಿಯಾಗಿದೆ. ರಾಜಕೀಯದ ಛೇದನವೇಳೆಯನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು ಈ ಅಧಾನವು ತತ್ವಶಾಸ್ತ್ರ & ನೈತಿಕ ಮೌಲ್ಯಗಳಿಗೆ ಮಹತ್ವ ನೀಡುತ್ತದೆ.

ಈ ಅಧಾನದ ಮೂಲಕ ರಾಜ್ಯಶಾಸ್ತ್ರದ ವಸ್ತು - ಅಡಿಯಗಳನ್ನು ಅಧ್ಯಯನ ಮಾಡುವ ರಾಜ್ಯಶಾಸ್ತ್ರಜ್ಞನು ಭಾವನಾತ್ಮಕವಾಗಿ ಒಡತೃಕವಾಗಿ ರಾಜಕೀಯ ಛೇದನವೇಳೆಯನ್ನು ಅತ್ಯಂತ ಶೂನ್ಯವಾಗಿ ರಾಜ್ಯದ ಸ್ವಭಾವ, ಗುಣ, ಕಾರ್ಯವನ್ನು ಅರ್ಥೈಸುವಾಗ ಒಡತೃ ಮಹತ್ವ ನೀಡುವ ಜೊತೆಗೆ ತತ್ವ ಅಥವಾ ನೈತಿಕತೆಗೆ ಮಹತ್ವ ನೀಡಿ, ವಾಸ್ತವ ಸಂಗತಿಗಳನ್ನು ಕಂಡುಬರಿಸುತ್ತಾನೆ.

ಈ ಅಧಾನದ ಸಂಪೂರ್ಣವಾದ ವ್ಯಕ್ತಿಪಡಿಸುವ ತತ್ವಗಳು ನೈತಿಕ ಮೌಲ್ಯಗಳು ಪ್ರಸಕ್ತ ಕಲ್ಪನೆ ಸಂಕುಲವಾಗುವವು. ಇವು ಪ್ರತಿಪಾದಿಸುವ ತತ್ವಗಳು, ಅಧ್ಯಯನಗಳು ಅದರಲ್ಲಿ ಮುಖ್ಯವಾಗಿದೆ. ಒಂದೆಂದರೆ 'ಭಾರತೀಯರಾದ್ಯವಸ್ಥಾನಿಲ (ರಿಪಬ್ಲಿಕ್ ಗ್ರಂಥಿನ್ಯ)' ಸರ್ ಥಾಸಿಸ್ ಮೂಲಕವಾಗಿ 'ಯುಜ್ವಲಿಯಾ' ವಸ್ತುಗಳ ಮಹತ್ವ ಗುಣಪಡಿಸುವವರು 'ರಾಮರಾಜ್ಯ' ವಸ್ತುಗಳ ಜಾಣ್ಡೆ ತರಲು ಸಾಧ್ಯವಾಗುವುದಿಲ್ಲ. ಅದರಿಂದಲೇ ಜಿ.ಎಸ್.ಎಲ್ "ಈ ಮಾದರಿಯ ನಿಗಮನ ಪದ್ಧತಿಯನ್ನು ತಿಳಿಸಿದ್ದು, ಇದು ಕೆಲವು ಕಲ್ಪನೆಗೆ ಮಾನವೀಯ ಮೌಲ್ಯಗಳಿಗೆ, ನೈತಿಕತೆಗೆ, ತಜ್ಞನಕ್ಕೆ ಮಹತ್ವ ನೀಡುತ್ತದೆ" ಎಂದಿದ್ದಾರೆ. ಗುಣಗಳು ೧- ೧ ಇದು ಮಾನವೀಯ ಮೌಲ್ಯ, ನೈತಿಕತೆ ಹಾಗೂ ತತ್ವಗಳಿಗೆ ಅಧ್ಯಯನ ನೀಡುತ್ತದೆ.

೧ ಇದನ್ನು ಕಲಹಕ್ಕೆ ತ್ವರಿತ ಅಧಾನವು ಮೌಲ್ಯಯುತವಾಯಿತಾಗಿದೆ. ಹೊಲಗಳಿಗೆ ೧- ತ್ವರಿತ ಅಧಾನವು ಅನೇಕ ಹೊಲಗಳಿಂದ ಕೂಡಿದೆ. ಅಪಿಗಳಿಗಿಂತ ೧ ಈ ಅಧಾನವನ್ನು ಪ್ರತಿಪಾದಿಸುವ ಸರ್ವತ್ರವಾಗಿ ನಿಶ್ಚಲವಾದಂತಹ ಯೋಜನೆಗೆ ಬರುವಲ್ಲಿ ಅಳಿಸಲಾಗಿದೆ.

- ೧ ಇವು ಒಡತೃಕವು, ಭಾರತೀಯವಾದವುಗಳು ಆಗಿವೆ.
- ೧ ಇವುಗಳು ಬಿಡಿಬಿಡಿ ಭಾರತವನ್ನು ಹೊಂದಿರುವುದಿಲ್ಲ.
- ೧ ಇದು ಶಾಸ್ತ್ರ ಭಾರತವಾಗಿದೆ.
- ೧ ಈ ಅಧಾನ ಅತ್ಯಂತ ಶೂನ್ಯವಾಗಿ & ಅವಾಸ್ತವಿಕವಾಗಿ ಆಗಿದೆ.

2. ಅನುಗಮನ ಪದ್ಧತಿಗಳು :-

ಈ ಪದ್ಧತಿಯು ರಾಜ್ಯಶಾಸ್ತ್ರದ ಸಂಕೀರ್ಣತೆಯನ್ನು ತನ್ನ ಒಳಿಯಲ್ಲಿ ಸಂಬಂಧಿಸಿದ ವಿಷಯಗಳನ್ನು ಸಂಯೋಜಿಸುತ್ತಾ ಈ ಒಳಿಯುಗಳ ಸಂಗ್ರಹವನ್ನು ಉದ್ದೇಶಿಸಿ ಮಹಾ ಸಾಮಾನ್ಯ ನಿಯಮ ಅಥವಾ ಸಾರ್ವತ್ರಿಕ ತತ್ವಗಳನ್ನು ನಿರೂಪಿಸುತ್ತದೆ.

ಇನ್ನೊಂದು ರೀತಿಯಲ್ಲಿ ಹೇಳುವುದಾದರೆ ಈ ಪದ್ಧತಿಯು ನಡವಳಿ ನಿಯಮ ಅಥವಾ ತತ್ವದಿಂದ ಸಾಮಾನ್ಯ ನಿಯಮ (೧) ಸಾರ್ವತ್ರಿಕ ತತ್ವಗಳಿಗೆ ಬರಲಾಗುತ್ತದೆ. (Particular to General). ಈ ಪದ್ಧತಿಯು ನಡವಳಿ ಪದ್ಧತಿಗೆ ವಿರುದ್ಧವಾಗಿದೆ.

ಅನುಗಮನ ಪದ್ಧತಿಯು ಒಂದೇ ವಿಧಾನಗಳನ್ನು ಅನುಸರಿಸಲಾಗುತ್ತದೆ.

ಅವುಗಳನ್ನು ಮುಖ್ಯವಾದವುಗಳೆಂದರೆ,

- ೧ ಯಿಹಾನಿಕೆ ಅಥವಾ,
- ೨ ಪ್ರಾಯೋಗಿಕ ಅಥವಾ,
- ೩ ಅವಲೋಕನ ಅಥವಾ,
- ೪ ಲೋಕಾ ಅಥವಾ,
- ೫ ವಿಕೇನ ಅಥವಾ.

೧ ಯಿಹಾನಿಕೆ ಅಥವಾ :- ರಾಜ್ಯದ ಲಗಮ, ವ್ಯವಹಾರ, ಸ್ವಲ್ಪವೆ, ಲಘುವೆ ಹಾಗೂ ಕಾರ್ಯ ನಿರ್ವಹಿಸುವ ಅಧ್ಯಯನ ಮಾಡುವ ರಾಜ್ಯಶಾಸ್ತ್ರಜ್ಞರಿಗೆ ಯಿಹಾನಿಕೆ ಪ್ರಯೋಗಗಳನ್ನು ಗುರುತಿಸುವುದು (Real Materials) ಒದಗಿಸುತ್ತದೆ.

ರಾಜಕೀಯ ಸಂಸ್ಥೆಗಳು ೬ ರಾಜ್ಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಸಂಸ್ಥೆಗಳು ಯಿಹಾನಿಕೆ ಕೆಲವಾಗಿದೆ. ಈ ಸಂಸ್ಥೆಗಳು ನಿರೀಕ್ಷಿಸುವ ವಿಷಯವು ಸ್ವಲ್ಪವಾಗಿರಬೇಕು ಸ್ವಲ್ಪವಾಗಿರಬೇಕು ಬಂದ ಸಂಸ್ಥೆಗಳಾಗಿವೆ. ಈ ಅಧ್ಯಯನವು ಯಿಹಾನಿಕೆ ಸಾಮಗ್ರಿಗಳ (ಪ್ರಯೋಗಗಳು)ನ್ನು ಯಥಾವತ್ತಾಗಿ ನಿರೀಕ್ಷಿಸುತ್ತದೆ. ಈ ಅಧ್ಯಯನವನ್ನು ಉದ್ದೇಶಿಸಿಬಿಟ್ಟುಕೊಂಡು ರಾಜ್ಯಶಾಸ್ತ್ರವನ್ನು ಅಧ್ಯಯನ ಮಾಡಿದ ರಾಜ್ಯಶಾಸ್ತ್ರಜ್ಞರಾದರೆ ಜಾರ್ಜ್, ಕ್ರೀಮನ್, ಎಡ್ವಿನ್ ಬರ್ಕ್ಲೆ, ಮೂಡರ್ನಿ, ಮೈನ್, ಸರ್. ಜಿ.ಎಮ್. ಕಾರ್ಲಿಂಗ್, ಮೊದಲಾದವರು.

ಗತಕಾಲದ ರಾಜಕೀಯ ಘಟನಾವಳಿಗಳನ್ನು ಅರಿಯಲು ಸಹಾಯವಾಗುತ್ತದೆ. ರಾಜ್ಯಶಾಸ್ತ್ರಜ್ಞರು ರಾಜಕೀಯ ಸಾಕ್ಷ್ಯವೆ ಹಾಗೂ ಅಧ್ಯಯನವನ್ನು ಈ ಅಧ್ಯಯನದ ವಿಷಯವಾಗಿ.

ಗುಣಗಳು :- ೧ ರಾಜಕೀಯ ಸಂಸ್ಥೆಗಳು, ರಾಜಕೀಯ ಲಗಮ ವ್ಯವಹಾರಗಳನ್ನು ಅಧ್ಯಯನ ಮಾಡಬಹುದಾಗಿದೆ.

- ೧ ಈ ಅಧ್ಯಯನವು ಅನುಭವವನ್ನು ಅವಲಂಬಿಸುತ್ತದೆ.
- ಮಾಹಿತಿಗಳು :- ೧ ಈ ಅಧ್ಯಯನವು ರಾಜಕೀಯ ಸಂಸ್ಥೆಗಳು ಹಿಂದೆ ಹೋದವು ಎಂದು ವಿವರಿಸುತ್ತದೆ. ೨ ವೈಯಕ್ತಿಕವಾಗಿ ಕುರಿತು ವಿವರಿಸುತ್ತದೆ.
- ೧ ಇದು ಉಪಯುಕ್ತವಾದ ಗುಣವನ್ನು ಹೊಂದಿದೆ.
- ೧ ಅದಕ್ಕೆ ರಾಜಕೀಯ ಸಮಾಜದಲ್ಲಿ ಅನ್ವಯಿಸಲು ಸಾಧ್ಯವಿಲ್ಲ.

ಶ್ರೀಯುಕ್ತ ಅಧಿನಿಯಮ ೧೯ - ಶ್ರೀಯುಕ್ತ ಅಧಿನಿಯಮವನ್ನು ಸಾಮಾನ್ಯವಾಗಿ ಭಿತ್ತಿ ಅಧಿನಿಯಮ
ಮಾತ್ರ ಬಳಕೆ ಮಾಡಲಾಗುತ್ತದೆ. ರಾಜ್ಯ ಶಾಸ್ತ್ರವು ಮಾನವನ ಬಗ್ಗೆ ಉತ್ತಮ ಕೃತಿಯೆಂದೆ
ಅರ್ಥವಾದ ಸಂಕ್ಷಿಪ್ತ - ಸಂಕ್ಷಿಪ್ತ ಬಗ್ಗೆ ಅಧಿನಿಯಮ ಮಾಡುತ್ತದೆ.

ಕೆಲವು ರಾಜಕೀಯ ಅಧಿನಿಯಮಗಳು ರಾಜ್ಯ ಶಾಸ್ತ್ರವನ್ನು ರಾಜಕೀಯ ಅಧಿನಿಯಮ
ಎಂದು ಕರೆಯುತ್ತದೆ, ಭಿತ್ತಿ ಅಧಿನಿಯಮದಂತೆಯೇ ಇಲ್ಲವೂ ಶ್ರೀಯುಕ್ತ ಸಾಧ್ಯವೆಂದು
ಪರಿಗಣಿಸಿದ್ದಾರೆ. ಯಂತ್ರಾಂಶಕರಣಗಳ ಸಹಾಯವನ್ನು ಪಡೆಯುತ್ತಾರೆ ಉದಾಹರಣೆಗೆ ರಾಜ್ಯ ಶಾಸ್ತ್ರದ
ಸಂಕುಲವೆಂದೇ ಈ ರೀತಿಯ ಯಂತ್ರಾಂಶಕರಣವೆಂದೇ ಯಾವುದೇ ಅಧಿನಿಯಮ ಸಾಧ್ಯವಿಲ್ಲ.
ಈ ಅಧಿನಿಯಮ ಪ್ರಯೋಗಾತ್ಮಕತೆಯ ಅಧೀನವನ್ನು ಹೊಂದಿರುತ್ತದೆ.

ಗುಣಗಳು ೧ - ೧ ಸರ್ಕಾರವು ಕೆಲವು ಕಾನೂನು, ನೆಲ, ಸಂಕ್ಷಿಪ್ತಗಳನ್ನು ಶಾಸ್ತ್ರವಾಗಿ
ಹೊಂದಲು ಅವಕಾಶ ಕಲ್ಪಿಸಿಕೊಡುತ್ತದೆ.
೨ ಕಾನೂನು, ನೆಲ, ವ್ಯವಸ್ಥಿತತೆಯ ಸುಧಾರಣೆ, ಬಹುಲವೆಡೆ ಅಭಿವೃದ್ಧಿ ತ್ವರಿತವಾಗಿ ಇದು
ಸಹಕಾರಿಯಾಗುತ್ತದೆ.

ಮಾಹಿತಿಗಳು ೧ - ಈ ಅಧಿನಿಯಮ ಗುಣಗಳಂತೆ ಒಳ್ಳೆ ಮಾಹಿತಿಗಳು ಕೊಡುತ್ತದೆ
೨ ಈ ಅಧಿನಿಯಮ ಸಂಕುಲಕರಣ ಸಾರ್ವತ್ರಿಕವಾದ ನಿಯಮವನ್ನು ಕೊಡಲು ಅಧಿನಿಯಮ
- ರ. ೨ ಇದು ವ್ಯವಸ್ಥಿತವಾದ ಅಧಿನಿಯಮ.

೨ ಅವಶ್ಯಕತೆ ಅಧಿನಿಯಮ ೧ - ಈ ಅಧಿನಿಯಮ 19'ನೇ ಶತಮಾನದ ನಂತರ ಪ್ರವೇಶಿಸಿ
- ನಕ್ಷೆ ಬಿಡುವುದಿದೆ. ಈ ಅಧಿನಿಯಮ ಅಧಿನಿಯಮ ೧೨ ಪರಿಷ್ಕರಣೆ ಅಧಿನಿಯಮ ಎಂದು
ಕರೆಯಲಾಗುತ್ತದೆ.

ಈ ಅಧಿನಿಯಮ ಸಂಕುಲಕರಣ ರಾಜಕೀಯ ಛೇದನವಾಗಿದೆ ನೆಲ ಅಧಿನಿಯಮ, ಅವಶ್ಯಕತೆ
- ದ ಅಧಿನಿಯಮ ಸಂಗ್ರಹಣೆ, ಅಧಿನಿಯಮ ಉದಾಹರಣೆಗಳ ಮೂಲಕ ಸಾಮಾನ್ಯ
ನಿಯಮ ೧೨ ತಕ್ಷಣ ಬರುತ್ತಾನೆ. ಛೇದನ ನಡವಳಿ ಸ್ವಲ್ಪ ಸಂಕುಲಕರಣ ಯಾವಾಗ
ಬಹುಲವಾಗಿ ಇಲ್ಲ ನಡವಳಿಯಿದೆ. ಛೇದನ ನಡವಳಿ ಸ್ವಲ್ಪವಾಗಿ ಪ್ರತ್ಯೇಕ ಪರಿಗಣಿಸಿದರೆ
ಸಂದರ್ಶನ, ರೆಕಾರ್ಡ್‌ಗಳು (ಆಡಿಯೋ ಅಥವಾ ವಿಡಿಯೋ) ಸಹಾಯವೆಂದೆ ತನ್ನೆಡೆ ಛೇದನ
ಸಾಮಾನ್ಯ ತಕ್ಷಣ ಅಭಿವೃದ್ಧಿ ನಿಯಮಕ್ಕೆ ಬರುತ್ತಾನೆ.

ಗುಣಗಳು ೧ - ೨ ಈ ಅಧಿನಿಯಮ ಛೇದನೆಯ ನಡವಳಿ ಕಂಡುಹಿಡಿಯಬಹುದಾಗಿದೆ.
೨ ರಾಜ್ಯ ಶಾಸ್ತ್ರವನ್ನು ವ್ಯವಸ್ಥಿತವಾಗಿ ೬ ವ್ಯವಸ್ಥಿತವಾಗಿ ಅಧಿನಿಯಮ ಮಾಡಬಹುದಾಗಿದೆ.
ಮಾಹಿತಿಗಳು ೧ - ೨ ಈ ಅಧಿನಿಯಮ ಸಂಗ್ರಹಿಸುವ ಅಧಿನಿಯಮ ಸಂಕುಲಕರಣ ಮನಸ್ಸಿಗೆ ಅಮೂಲಕ
- ಪುಟ.

೨ ರಾಜಕೀಯ ಸಂಕ್ಷಿಪ್ತ ಕಾನೂನು ೬ ವ್ಯವಸ್ಥಿತವಾಗಿ ಕಡಗಗುತ್ತದೆ.
೨ ಇದು ತನ್ನೆಡೆ ಛೇದನ ಅಧಿನಿಯಮ ಹೊಂದಿದೆ.

ಯಾಂಕಿ ಅಥಾನ ೬- ಶೃಂಗನ ಕೂಡಾಯಾ ರಾಜ್ಯಶಾಸ್ತ್ರದ ಅಧ್ಯಯನಕ್ಕೆ
 ಬಳಸುತ್ತೆ ಬಂದಿದ್ದಾರೆ. ಇದು ಯಿಂಥಾ ಅಥಾನಕ್ಕೆ ಶುಭಕವಾಯದಿವೆ,
 ರಾಜಕೀಯ ಘಟನಾವಳಿಗಳನ್ನು ಮತ್ತೊಂದು ದೇಶದ ಅಥವಾ ಹಲವು ದೇಶಗಳ ರಾಜಕೀಯ
 ಸಂಸ್ಥೆ ① ರಾಜಕೀಯ ಘಟನಾವಳಿಗಳಿಗೆ ಯಾಂಕಿಮಾಡಲು ಪ್ರಯತ್ನಿಸುತ್ತಾನೆ.
 ಅಂಕಿ-ಅಂಕಿ ಸಂಗ್ರಹಣೆ ಮಾಡುತ್ತಾನೆ ತತ್ಪಕ್ಷದ ಅಂಶಗಳ ಅಧಿಕಾರಿ
 158 ಸಂವಿಧಾನಗಳನ್ನು ಸಂಗ್ರಹಿಸಿ, ಯಾಂಕಿ ಮಾಡಿ ತನ್ನದೇ ಒದ ಸಂವಿಧಾನವಿಡಿಸಿ
 - 12 ತತ್ಪಕ್ಷವನ್ನು ನೀಡಿದ್ದಾರೆ.

ಸಂಸತ್ತಿಗೆ ಮುಂಚೆ ಇದೇ ಅಥಾನವನ್ನು ಅಳವಡಿಸಿಕೊಂಡು ರಾಜ್ಯಶಾಸ್ತ್ರಕ್ಕೆ ದ ಸ್ಪೀಚ್ ಒಳ
 ಲಾಕ್ ಎಂಬ ಗ್ರಂಥವನ್ನು ಕೊಡುತಾನೆ ನೀಡಿದ್ದಾನೆ. ಜೇಮ್ಸ್, ಬ್ಲೈಸ್, ಜಿ.ಎಸ್. ಲೂಕ್,
 ಮೊದಲಾದವರಿದ್ದಾರೆ. ಒಂದೇ ರೀತಿಯ ರಾಜಕೀಯ ವ್ಯವಸ್ಥೆ ಇಾಗ ಸಾಮಾಜಿಕ ಸಂಸ್ಥೆ
 -ಗಳನ್ನು ಹೊಂದಿರುವ ರಾಜ್ಯದಲ್ಲಿ ಮಾತ್ರ ಸಾಧ್ಯ. ಇದರ ಚುಕ್ಕೆ ಯೆಕೆಡಾಳಿಕೆಮಾ
 ಇಾಗ ಪ್ರಜಾಪ್ರಭುತ್ವ ಸಮಸ್ಯೆಗಳೆರಡನ್ನು ಅಧ್ಯಯನ ಮಾಡಿ ದತ್ತಾಂಶ ಹಾಗೆ ಅಧಿಕಾರ ಸಂಗ್ರ
 -ಹಗೆ 6 ಅಕ್ಷರಗಳಿಗಿಂತಲೂ ಯಾಂಕಿಮಾಡುವ ಮೂಲಕ ಸಾಮಾನ್ಯ ನಿಯಮ ②
 ತತ್ಪಕ್ಷಕ್ಕೆ ಬರಬಹುದಾದೀವೆ. ③ಗೆ ಮಾತ್ರ ಈ ವಿಧಾನ ರಾಜ್ಯಶಾಸ್ತ್ರದ ಅಧ್ಯಯನಕ್ಕೆ ಬಹುಮುಖ್ಯ
 -ವಾಗುತ್ತದೆ.

4 ವರ್ತನಾ ಅಥಾನ :- ರಾಜಕೀಯ ಘಟನಾವಳಿಗಳ ಅಧ್ಯಯನದಲ್ಲಿ ವರ್ತನಾ ಅಥವಾ
 ನಡವಳಿಕಾ ಅಥಾನವು ಅತ್ಯಂತ ಮುಖ್ಯವಾದ ಅಂಶವಾಗಿದೆ. ಅನುಸರಿಸುತ್ತದೆ. ಈ
 ಅಥಾನವು ಮಾನವನ ಇತಿಹಾಸ ಸ್ವಭಾವವನ್ನು ಅಧ್ಯಯನ ಮಾಡುವ ಉದ್ದೇಶವನ್ನು
 ಹೊಂದಿದ್ದು, ಈ ಅಥಾನವನ್ನು ಇದುವೇ ರಾಜ್ಯಶಾಸ್ತ್ರಜ್ಞರು ವ್ಯಕ್ತಿಸಿಕವಾದ ಅಥಾನ ಎಂದು
 ಪರಿಗಣಿಸಿದ್ದಾರೆ.

ರಾಜಕೀಯ ವರ್ತನಾ ಅಥಾನದ ಅರ್ಥವೇನೆಂದರೆ ಬಗ್ಗೆ ವರ್ತನಾ ಅಭ್ಯಾಸಗಳಲ್ಲಿ
 ಒಮ್ಮತದ ಅಭಿಪ್ರಾಯವಿಲ್ಲ. ಇದು ಮನುಷ್ಯನ ಅಭ್ಯಾಸದ ಸಹಾಯವಾದ ಮಾನವನ ರಾಜಕೀಯ
 ವರ್ತನೆಯನ್ನು ಅಧ್ಯಯನವನ್ನು ಮಾಡುವ ಉದ್ದೇಶವನ್ನು ಹೊಂದಿದೆ. ಇದಕ್ಕೆ ವರ್ತನಾ
 ವ್ಯಾನ್ ಸ್ಪೆಕ್ ಪ್ರಕಾರ, ಈ ಅಥಾನವು ಮಾನವನ ರಾಜಕೀಯ ಚಟುವಟಿಕೆ 6 ಮತದಾರ
 ವರ್ತನೆಯನ್ನು ಅಧ್ಯಯನ ಮಾಡುತ್ತದೆ, ಬಹುತೇಕ ವರ್ತನಾ ಅಭ್ಯಾಸಗಳು ಈ ಅಭಿಪ್ರಾಯವಿ
 -ನ್ನು ಅನುಮೋದಿಸಿದ್ದಾರೆ.

ಈ ಅಥಾನವು ಹೆಚ್ಚು ಪ್ರವರ್ಧಿಸುವಂತೆ ಬಂದಿದ್ದು, 2 ನೇ ಮಹಾಯುದ್ಧದ ನಂತರ
 (1935-45), ಇದಕ್ಕೆ ಮಾದಲು ಮೆಕ್ಸಿಕೊ, ಇಟಲಿ, ಲಾಕ್, ರುಸ್ಸೋ, ಚಿಂಫಾಮೆ,
 ಜಿ.ಎಸ್. ಲೂಕ್, ಮೊದಲಾದವರು ಮಾನವನ ಸ್ವಭಾವವನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು
 ಪ್ರಯತ್ನಿಸಿದ್ದಾರೆ.

D.V.S College of Arts and
Science

SUBJECT :- POLITICAL SCIENCE

TOPIC :- ರಾಯಭಾರಕ್ಕೂ ಮತ್ತು
ಯುದ್ಧ

From :-

NAMRATHA-H
Final year B.A
5th Semester
D.V.S College of Arts & Science
Shimoga.

To :-

ABHISHEK SIR
POLITICAL SCIENCE
DEPARTMENT
D.V.S College of Arts & Science
Shimoga.

ಕರ್ತವ್ಯವಾಗಿದೆ. ರಾಯಭಾರಿಯು ಮೂಲಕ ಒಂದು
 ದೇಶದ ವಿವೇಚನೆಯನ್ನು ಎವರಗಳನ್ನು ತಿಳಿಯಲು
 ಸಹಾಯಕವಾಗುತ್ತದೆ. ಆದುದರಿಂದ ರಾಯಭಾರಿಯನ್ನು
 ತನ್ನ ದೇಶದ ಕಲ್ಯಾಣ ಮತ್ತು ಕಿವಿಯಾಗಿ ಕೆಲಸ
 ಮಾಡುತ್ತಾನೆ ಎಂದು ದೇಶದರು ತಪ್ಪುಗಲರದು
 ರಾಯಭಾರಿ ಸಲ್ಲ ಸುವ ವಾರದಿಗಳು ತನ್ನ ದೇಶದ
 ವಿವೇಚನಾಂಗ ನೀತಿ ರೂಪಿಸುವಲ್ಲಿ ಕಷ್ಟ ವಸ್ತುವಿದ್ಯಂತೆ

4) ರಾಷ್ಟ್ರಸಹಾಯಕತೆಯ ರಕ್ಷಣೆ :-

ರಾಯಭಾರಿಯು ಮತ್ತೊಂದು ಪ್ರಮುಖ ಕಾರ್ಯ
 -ವೆಂದರೆ ವಿವೇಚನೆಯಲ್ಲಿ ತನ್ನ ರಾಷ್ಟ್ರಕ್ಕೆ ಸುವ ಸವಲತ್ತು
 ಕಿ ಸೌಲಭ್ಯಗಳನ್ನು ಯಿತಾ ಸಕ್ತಗಳನ್ನು ರಕ್ಷಿಸಿಕೊಂಡು
 ಕೊಡುವುದು. ಆದರೂ ಸದಸ್ಯರು ವಸ್ತು ಮಟ್ಟಿಗೆ
 ರಾಷ್ಟ್ರದ ಯಿತಾ ಸಕ್ತಗಳು ವೃದ್ಧಿಯಾಗುವಂತೆ ಮಾಡಬೇಕು
 ರಾಯಭಾರಿಯು ದೇಶದ ವ್ಯಾಪಾರಿಗಳಾಗಿರಬಹುದು, ವಿದ್ಯಾರ್ಥಿ
 -ಗಳಿರಬಹುದು, ಪ್ರವಾಸಿಗಳಿರಬಹುದು ಅಥವಾ ಬೆಂಕಿ
 ಕನೇ ಆಗಿರಬಹುದು. ಅವರಲ್ಲರ ಯಿತಾ ಸಕ್ತಿಯನ್ನು
 ರಕ್ಷಿಸುವಲ್ಲಿ ನೇರವಾಗುವುದು ರಾಯಭಾರಿಯ ಕರ್ತವ್ಯ
 -ವಾಗಿದೆ. ಅವರಲ್ಲರಿಗೂ ತೊಂದರೆಯಾಗದ ರೀತಿಯಲ್ಲಿ
 ನಿಷ್ಪಕ್ಷ ಪಾತ್ರದಲ್ಲಿ ಕಾರ್ಯ ನಿರ್ವಹಿಸುವುದು ರಾಯಭಾರಿ
 -ಯ ಕರ್ತವ್ಯವಾಗಿದೆ.

ಉಪಸಂಹಾರ :-

ಒಂದು ದೇಶದ ಯಿತಾ ಸಕ್ತಗಳಿಗೆ ರಾಯಭಾರಿ
 -ಯ ರಕ್ಷೆಯಲ್ಲಿರುತ್ತದೆ. ರಾಯಭಾರಿಯು ಬುದ್ಧಿವಂತಿಕೆಯು
 -ದ ಯಾವುದೇ ಸಂದರ್ಭದಲ್ಲಿ ತನ್ನ ತಾಯ್ನಾಡಿಗೆ
 ದಕ್ಷಿಯಾಗದಂತೆ ಕಾರ್ಯ ನಿರ್ವಹಿಸುತ್ತಾನೆ. ರಾಯಭಾರಿಯು
 2 ದೇಶಗಳ ಸಂಬಂಧ ಕಲ್ಪಿಸುವಲ್ಲಿ ಪಾತ್ರವಹಿಸುತ್ತಾನೆ.

2) ರಾಯಭಾರಗಳ ವಿಷಯ ಸವಲತ್ತು ಮತ್ತು ಠಯಾಯಿತಿಗಳನ್ನು
 ಅವರಿಸಿ ?

ಉ:- 1) ವ್ಯಯಕ್ತಿಕ ರಕ್ಷಣೆ :-

ರಾಜ ತಾಂತ್ರಿಕ ವರ್ಗದವರಿಗೆ ಜೀವ ರಕ್ಷಣೆ
 ಜಾಗೃತ ಬಂಧನದ ವಿರುದ್ಧ ರಕ್ಷಣೆ ಯೋಗ್ಯ 2 ಬಗೆಯ ರಕ್ಷಣೆ
 ನೀಡಲಾಗುತ್ತದೆ.

ರಾಯಭಾರಿಯು ಉತ್ತಮ ಕುಟುಂಬ ವರ್ಗ, ರಾಯಭಾರವು
 ವರ್ಗದ ಅಧಿಕಾರಿಗಳು, ಸೇವಾವರ್ಗದವರು ಯೋಗ್ಯ
 ಇವರಲ್ಲದೂ ಈ ರಕ್ಷಣೆಯ ವ್ಯಾಪ್ತಿ ಲಭಿಸಿರುತ್ತದೆ.

2) ನಿವಾಸಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ರಕ್ಷಣೆ :-

ರಾಯಭಾರಿಯು ಯಾವ ದೇಶದಲ್ಲಿದ್ದರೂ ಇತರ ಉತ್ತಮ
 ನಿವಾಸವನ್ನು ಉತ್ತಮ ತಾಯಿ ನಾಡಿನ ಸುರಕ್ಷತೆಯಿಂದ
 ಪರಿಗಣಿಸಲಾಗುತ್ತದೆ. ರಾಯಭಾರಿಯ ನಿವಾಸವನ್ನಾಗಲಿ,
 ಕಚೇರಿಯನ್ನಾಗಲಿ ಸುರಕ್ಷಿಸುವಂತೆಲ್ಲ ಪ್ರೋಲಸು ರಾಜ ತಾಂತ್ರಿಕ
 -ಕರ ನಿವಾಸದ ಬಳಿಗೆ ಪ್ರವೇಶಿಸುವಂತಲ್ಲ.

3) ತೆರಿಗೆ ವಿನ್ಯಾಸ :-

ರಾಜ ತಾಂತ್ರಿಕರು ಎಲ್ಲಾ ರೀತಿಯ ಪ್ರತ್ಯೇಕ ತೆರಿಗೆ
 -ಯಿಂದ ವಿನ್ಯಾಸ ಪಡೆದಿರುತ್ತಾರೆ. ರಾಯಭಾರಿಗಳ ಮೇಲೆ
 ಯಾವ ವಿಧವಾದ ಪ್ರತ್ಯೇಕ ತೆರಿಗೆಯನ್ನು ವಿಧಿಸುವಂತೆಲ್ಲ
 ಅಡ್ಡುಚ್ಚುಕೆ ಜಾಗೃತ ನೀರಿನ ಕಂದಾಯವನ್ನು ಮತ್ತೆ ಕಟ್ಟಬೇಕು

4) ಸೀವಿಲ್ ಮತ್ತು ಕ್ರಿಮಿನಲ್ ಕಾನೂನುಗಳ ವ್ಯಾಪ್ತಿಯಿಂದ

ವಿನ್ಯಾಸ :-

ರಾಜ ತಾಂತ್ರಿಕನು ಕೆಲಸ ಮಾಡುತ್ತಿರುವ ದೇಶದ
 ಸೀವಿಲ್ ಅಥವಾ ಕ್ರಿಮಿನಲ್ ಕಾನೂನುಗಳ ವ್ಯಾಪ್ತಿಗೆ

ಬಳಪಡುವುದಿಲ್ಲ. ಅಲ್ಲನ ಯಾವುದೇ ನ್ಯಾಯಯು ಚತನ
 ಯಿರುದ್ಧ ಮೊಕದ್ದಮೆ ಸೂಡಲಾಗುವುದಿಲ್ಲ. ರಾಯಭಾರಿಯು
 ಕಾನೂನಿನ ವಿರೋಧವಾಗಿ ಅಥವಾ ರಾಷ್ಟ್ರವಿರೋಧಿ
 ಚಟುವಟಿಕೆಗಳಲ್ಲಿ ತೊಡಗಿದಾಗ ಚತನನ್ನು ಬಂಧಿಸಿ
 ಚತನ ದೇಶಕ್ಕೆ ಒಪ್ಪಿಸಲಾಗುವುದು

5) ಧರ್ಮೀಕ ಅಥವಾ ಚಿರಾಧನ ಸ್ವಾತಂತ್ರ್ಯ:-

ರಾಜ ತಾಂತ್ರಿಕರು ಹಾಗೂ ಅವರ ಸಿಬ್ಬಂದಿ
 ವರ್ಗದವರಿಗೆ ಎಲ್ಲಾ ರೀತಿಯ ಧರ್ಮೀಕ ಸ್ವಾತಂತ್ರ್ಯವನ್ನು
 ನೀಡಲಾಗುತ್ತದೆ. ತಮಗಿಷ್ಟವೆನಿಸಿದ ದೇವರನ್ನು ಪೂಜಿಸಿ
 -ಬಹುದು. ರಾಜತಾಂತ್ರಿಕ ಚಿರಾಧನರಲ್ಲಿ ದೇವಸ್ಥಾನ ಅಥವಾ
 ಪೂಜಾಸ್ಥಳಗಳನ್ನು ಕಟ್ಟಿಸಿ ಕೊಟ್ಟು ಅವಕಾಶ ನೀಡಲಾಗುತ್ತದೆ.

6) ಸಂಪರ್ಕ ಸ್ವಾತಂತ್ರ್ಯ:-

ರಾಜ ತಾಂತ್ರಿಕರು ನಡೆಸುವ ಎಲ್ಲಾ ರೀತಿಯ
 ಪತ್ರ ವ್ಯವಹಾರ ಹಾಗೂ ಸಂಪರ್ಕಗಳು ಸರ್ಕಾರದ ಹಸ್ತ
 -ಕ್ಷೇಪದಿಂದ ಮುಕ್ತವಾಗಿರುತ್ತವೆ. ಚತನ ಚಿಪಾಲನ್ನು ಯಾವ
 ರೀತಿಯಿಂದಲೂ ಬಡವು ನೋಡುವಂತಿಲ್ಲ. ರಹಸ್ಯದ ಮಾಹಿತಿಯು
 -ನ್ನು ಇವರು ರಾಜತಾಂತ್ರಿಕ ಚಲದಲ್ಲೆ ಒಟ್ಟಿ ತಮ್ಮ ದೇಶಕ್ಕೆ
 ರವಾನಿಸುವ ಸ್ವಾತಂತ್ರ್ಯ ಹೊಂದಿರುತ್ತಾನೆ.

7) ಸ್ವದೇಶಕ್ಕೆ ಯಿಂಥಿರುವಾಗ ರಕ್ಷಣೆ:-

ರಾಯಭಾರಿಯು ಕಾರ್ಯ ನಿರ್ವಹಿಸುತ್ತಿರುವ
 ರಾಷ್ಟ್ರವಿಗಾಗೂ ಚತನ ತಾಯ್ನಾಡಿನ ನಡುವೆ ಯುಧ್ಧ ಸಂಭವಿ
 -ಸಿದರೆ ಅಥವಾ ರಾಜತಾಂತ್ರಿಕ ಸಂಬಂಧ ಕಡಿದು ಹೊರ
 ರಾಜತಾಂತ್ರಿಕರ ವರ್ಗಕ್ಕೆ ಸ್ವದೇಶಕ್ಕೆ ಮರಳಲು ಸಮರ್ಥ
 -ವಿಧದ ರಕ್ಷಣೆ ನೀಡಲಾಗುತ್ತದೆ.

3) ಯುದ್ಧದ ಕಾರಣಗಳನ್ನು 3೪ನಿ:-

೧:- 1) ಮಾನಸಿಕ ಕಾರಣಗಳು:-

ಯುದ್ಧವೂ ಮಾನವರ ಮನಸ್ಸಿನಲ್ಲಿ ಪ್ರಾಂಛನ
-ಗೊಳ್ಳುತ್ತದೆ ಎಂದು ಹೇಳಲಾಗಿದೆ. ತನಗಿರುವ ಅಭಿಪ್ರಾಯ
ಭಯವೇ ಯುದ್ಧಕ್ಕೆ ಮೂಲಕಾರಣವಾಗಿದೆ ಎಂಬ ಅಭಿಪ್ರಾಯ
-ವನ್ನು 'ಏಕಜ್ಞಮಾ' ಇವರು ಮೊತ್ತೆ ಪಡೆಸಿದ್ದಾರೆ.
ಮನಸ್ಸಿನಲ್ಲಿ ಮಾರ್ಗ ಎಂಬ ಮಾತಿನಂತೆ ನಾಯಕರ
ಮನಸ್ಸಿನಲ್ಲಿ ಯುದ್ಧವೂ ಅವಶ್ಯಕವೆನಿಸಿದರೆ ಅದು
ಅನಿವಾರ್ಯವೇ ಆಗುತ್ತದೆ ಎಂಬ ಅಭಿಪ್ರಾಯವನ್ನು
ಮೊತ್ತೆ ಪಡೆಸಿದ್ದಾರೆ. ಸ್ವಭಾವಿಕತೆ : ಮಾನವ ದೈಯಕವಾಗಿ
ಮತ್ತು ಮಾನಸಿಕವಾಗಿ ಅಥವಾ ೩೦೩ ಇದ್ದರೂ ಕಲಾಪ್ರಿಯ

2) ರಾಷ್ಟ್ರ ರಾಜ್ಯ ಮೊವಸೆ:-

ಪ್ರಪಂಚದ ಪ್ರತಿಯೊಂದು ರಾಷ್ಟ್ರವೂ ತನ್ನದೇ
ಆದ ಸ್ಥಳೀಯ ಸೋರಣಿಗಳನ್ನು, ವಿವೇಚನೆಗೆ ನಿತಿ ಮುಂತಾದವು
-ಗಳನ್ನು ಕೊಂಡಿಸು. ಅವುಗಳನ್ನು ಸಾಧಿಸುವ ನಿರಂತರ
ಪ್ರಯತ್ನದಲ್ಲಿ ತೊಡಗಿರುತ್ತಾರೆ. ಇಂತಹ ಸ್ಥಳೀಯ ನಿತಿಗಳಲ್ಲಿ,
ಒಂದು ರಾಷ್ಟ್ರದ ಸ್ಥಳೀಯ ಮತ್ತೊಂದು ರಾಷ್ಟ್ರದ ನಿತಿಗೆ ವಿರುದ್ಧ
-ವಾಗಿರಬಹುದು. ಇದು ರಾಷ್ಟ್ರಗಳ ನಡುವೆ ಘರ್ಷಣೆ,
ಕಲಹ ಇವುಗಳಿಗೆ ದಾರಿ ಮಾಡಿಕೊಟ್ಟು, ಅಂತಿಮವಾಗಿ
ಯುದ್ಧಕ್ಕೆ ಕಾರಣವಾಗುತ್ತದೆ. ಪ್ರಸ್ತುತ ರಾಜ್ಯ ಮೊವಸೆ
ಪದ್ಧತಿಯಲ್ಲಿ ಬದಲಾವಣೆಯನ್ನು ತರಬೇಕೇ ಸೂಚನೆ
ಯುದ್ಧವನ್ನು ನಿವಾರಿಸಲು ಸಾಧ್ಯವಿಲ್ಲ.

೨) ಪರಮಾಧಿಕಾರ ಮತ್ತು ಅಂತರಾಷ್ಟ್ರೀಯ ಕಾನೂನು :-
ಸಾರ್ವಭೌಮ ಅಧಿಕಾರದ ಪ್ರಕಾರ ಪ್ರತಿಯೊಂದು
ರಾಷ್ಟ್ರವು ತನ್ನಯಷ್ಟೆ ಬಂದ ಕ್ರಿಯೆ ಮೂಲಕ ರಕ್ಷಿಸಿ
-ಕೊಳ್ಳುತ್ತದೆ.

ಪ್ರತಿಯೊಂದು ರಾಷ್ಟ್ರವು ಮಿತಿಯಾದ ಸಕ್ರಿಯನ್ನು ಕೊಂಡುಮು-
 -ಕಂಡ. ಇನ್ನಿತರ ರಾಷ್ಟ್ರಗಳು ತಮ್ಮ ಸಕ್ರಿಯನ್ನು ಅರ್ಥ
 ರೀತಿಯಾಗಿ ಮಿತಿಯಾಗಿ ಬಳಸಬೇಕು, ಮಿತಿಯಿಂದಲ್ಲ
 ಯುದ್ಧಕ್ಕೆ ನಾಡಿಹದಿದಂತೆ ಆಗುತ್ತದೆ.

ಬ) ಪರಿಣಾಮಕಾರಿಯಾದ ಅಂತರರಾಷ್ಟ್ರೀಯ ಪ್ರಭಾವ :-
 ರಾಷ್ಟ್ರಗಳ ನಡುವೆ ಸಮಸ್ಯೆ ಉಂಟಾದಾಗ ಅವು
 -ಗಳನ್ನು ತಾಂತ್ರೀಯವಾಗಿ ಬಗೆ ಕಾಡುವ ಸಮರ್ಥತೆಯನ್ನು
 ಕೊಂಡಿರುವ ಅಂತರರಾಷ್ಟ್ರೀಯ ಸಂಸ್ಥೆಗಳ ಅಭಿಪ್ರಾಯವು
 ಯುದ್ಧಕ್ಕೆ ಕಾರಣವಾಗಿದೆ.

3) ಸ್ವದ್ಧಾಂತ್ರಿಕ ಕಾರಣಗಳು :-

ಅಭಿವೃದ್ಧಿ ಕೊಂಡಿರುವ ರಾಷ್ಟ್ರಗಳಾದ ಅಮೇರಿಕಾ
 ರಾಷ್ಟ್ರ, France, Germany ಇವುಗಳು ಅಭಿವೃದ್ಧಿ ಕೊಂಡುತರುವ
 ವ್ಯಾಪ್ತಿ ಮತ್ತು ಆರ್ಥಿಕ ರಾಷ್ಟ್ರಗಳಾದ ಚೀನಾ ಇವುಗಳ
 ಆರ್ಥಿಕ ಮತ್ತು ತಾಂತ್ರಿಕ ಅಂತರವನ್ನು ಕಡಿಮೆಗೊಳಿಸದಂತೆ
 ಕಾರಣವಾಗಿದೆ. ಯುದ್ಧ ಆಗುವ ಸಂಭಾವನೆ. ಸ್ವದ್ಧಾಂತ್ರಿಕ
 ಕಾರಣದಲ್ಲ ಅಭಿವೃದ್ಧಿ ಕೊಂಡಿರುವ ರಾಷ್ಟ್ರ ಮತ್ತು ಅಭಿವೃದ್ಧಿ
 ಕೊಂಡುತರುವ ರಾಷ್ಟ್ರಗಳ ನಡುವೆ ಕಲಹಗಳು ಮುಂಚಿನಿಂದ
 -ಲು ಕಾಣಬಹುದು.

4) ಆರ್ಥಿಕ ಕಾರಣ :-

ಅಭಿವೃದ್ಧಿ ಕೊಂಡಿರುವ ರಾಷ್ಟ್ರಗಳ ವ್ಯಾಪಾರ,
 ಗಣಿಭೂ ಮೂಲಕಾರದಲ್ಲ ಅಭಿವೃದ್ಧಿ ಕೊಂಡುತರುವ
 ರಾಷ್ಟ್ರಗಳ ಮೇಲೆ ಹೆಚ್ಚಿನ (ಸುಂಕದ) ತೆರಿಗೆ ವಿಧಿಸುವ
 ಮೂಲಕ ಆರ್ಥಿಕ ಲಾಭವನ್ನು ಪಡೆಯುತ್ತ ಬಂದಿದೆ.
 ಈ ತಾರತಮ್ಯದ ಕಾರಣಗಳಿಂದ ಮನಸ್ಸು, ಕಲಹಗಳು
 ಮುಂದುವರಿದ ಯುದ್ಧವು ಸಂಭವಿಸಿದೆ.

5) ರಾಜಕೀಯ ಕಾರಣಾಃ:-

ರಾಷ್ಟ್ರ ನಾಯಕರುಗಳು ರಾಜಕೀಯ ಕಾರಣಗಳಿಗಾಗಿ ಸ್ವರ ಯುದ್ಧವನ್ನು ಪ್ರೈತ್ಯಯಿಸಲು ಪ್ರಾಂಶುಸಿದ್ಧರು ತಮ್ಮ ಘನತೆ ತಮ್ಮ ಪುಕ್ಕವ ಘನತೆಗಳನ್ನು ಬಿಟ್ಟು ಸುವುದಕ್ಕಾಗಿ ಈ ರಾಷ್ಟ್ರದ ನಾಯಕರುಗಳು ಯುದ್ಧಕ್ಕೆ ಪ್ರೈತ್ಯಯಿಸ ತೊಡಗಿದರು ಇವರಿಂದಾಗಿ ರಾಜಕೀಯ ಯತಾಸಕ್ತಿ ಕಾರಣಗಳಿಂದ ವಿವಿಧ ರಾಷ್ಟ್ರಗಳ ನಡುವೆ ಯುದ್ಧಗಳು ಸಂಭವಿಸುತ್ತವೆ.

6) ಸಾಮಾಜಿಕ ಕಾರಣಾಃ:-

ಒಂದು ದೇಶದಲ್ಲಿ ಇರುವ ಬದತನ, ಉನಕ್ಷರತೆ, ಕಡಮೆ ಪ್ರಮಾಣದ ಉತ್ಪನ್ನ ಮಾದಲಾದ ಕಾರಣಗಳಿಗಾಗಿ ಸ್ವರ ಏನರು ಮುಕ್ತರಗಳನ್ನು ಮಾಡುವ ಸಂಭವವಿರು ತ್ತದೆ. ಉ ಸಂಶೋಷಣೆಗಳು ಉಸ ಜಾಯಗಳು ಜಗುಪ್ಪು ಗೊಂದ ಏನರನ್ನೆ ಉ ಧಿಕ ಕೊಂಡಿರುವ ರಾಷ್ಟ್ರಗಳು ಉನಾಕೂಗಿಸಿ ಕಾರವಾದ ತತ್ವಗಳ ಪಾಲನೆಯ ಮಾಲಕ ಯುದ್ಧಕ್ಕೆ ಕಾರಣವಾಗುತ್ತದೆ.

7) ಗುಪ್ತ ಸೈನಿಕ ಒಪ್ಪಂದಗಳು:-

ರಾಷ್ಟ್ರಗಳು ಬಂದರೊಡನೆ ಇನ್ನೊಂದು ಗುಪ್ತ ಸೈನಿಕ ಒಪ್ಪಂದವನ್ನು ಮಾಡಿಕೊಂಡಿರುವ ಮೂಲಕ ಯುದ್ಧಕ್ಕೆ ಪೂರ್ವಭಾವ ತಯಾರಿಗಳನ್ನು ಮಾಡಿಕೊಂಡು ತ್ತು -ಕೆ. ಇದನ್ನು ಮೊನ್ನೆತಕ ಯೋಧಿ ರಾಷ್ಟ್ರಗಳು ಸಹ ರಾಷ್ಟ್ರ -ಗಳೊಡನೆ ಸೈನಿಕ ಒಪ್ಪಂದಗಳನ್ನು ಮಾಡಿಕೊಂಡು ಪ್ರಾರಂಭಿಸುತ್ತದೆ. ಈ ಪೈಪೋಟಿಯು ಮುಂದುವರಿದು ಯುದ್ಧಕ್ಕೆ ಎದೆಮೊಡಕೊಡುತ್ತದೆ.

8) ಪ್ರಪಂಚದ ಸರ್ಕಾರ ಇರುವುದು :-

ಇಂದಿನ ಸಹ ರಾಷ್ಟ್ರಗಳ ಸರ್ಕಾರವನ್ನು ಕಡಿವಾಣದಲ್ಲ ಇರುತ್ತೇತಹ ವಿಷಯ ಮಟ್ಟದ ಸರ್ಕಾರ ಇಲ್ಲದೇ ಇರುವು ರಾಷ್ಟ್ರಗಳ ನಡುವೆ ಅನೇಕ ಕಾರಣಗಳಿಂದ ಸಂಭವಿಸುವ ಯುದ್ಧಗಳನ್ನು ತಡೆಯಲು ಅನಿವಾರ್ಯವಾಗಿದೆ.

9) ಇತರ ಕಾರಣಗಳು :-

ಒಂದು ರಾಷ್ಟ್ರದ ಅಧಿಕ ಜನಸಂಖ್ಯೆ ಯುದ್ಧ ಕಾರಣವಾಗ ಬಹುದು ಯುದ್ಧಕ್ಕೆ ಕಲವಾರು ಕಾರಣಗಳು ಇನ್ನು ನಿರೀಕ್ಷಿಸುವಾಗ ಇಂತಹದೇ ಕಾರಣ ಯುದ್ಧಕ್ಕೆ ಸಂದಿಯಾಗ ಬಹುದು ಎಂದು ಹೇಳಬಹುದು ತಪ್ಪಾಗಬಹುದು ಜನರ ಮನಸ್ಸಿಗೆ ರಾಷ್ಟ್ರ ನಾಯಕರ ತತ್ವಗಳು ಬಡತನ ಇಂತಹ ಕಲವು ಕಾರಣಗಳು ಯುದ್ಧಕ್ಕೆ ಎದೆ ಮಾಡಿಕೊಡುತ್ತವೆ.

4) ಯುದ್ಧದ ಪರಿಹಾರ ಮಾರ್ಗಗಳನ್ನು ವಿವರಿಸಿ ?

:- ನಿಶ್ಚಿನಿಕ್ರಮಣ :-

ನಿಶ್ಚಿನಿಕ್ರಮಣ ಯುದ್ಧವನ್ನು ತಡೆಯಲು ಇರುವ ಮತ್ತೊಂದು ಮಾರ್ಗ ಎಂದು ಪರಿಗಣಿಸಬಹುದು. ಯುದ್ಧ ಸಮಗ್ರಗಳ ತಯಾರಿಕೆಯನ್ನು ಎಲ್ಲ ರಾಷ್ಟ್ರಗಳೂ ನಿಲ್ಲಿಸುವುದರಿಂದ ಯುದ್ಧವನ್ನು ತಡೆಗಟ್ಟಬಹುದು. ಕೆಲವು ರಾಷ್ಟ್ರಗಳು ಮಂತ್ರ ಈ ತತ್ವವನ್ನು ಅನುಸರಿಸುತ್ತಿದ್ದಾರೆ. ಆದರಿಂದ ಯಾವ ಫಲವನ್ನು ನಿರೀಕ್ಷಿಸಲು ಸಾಧಿಸಲು ವಿಷಯ ಎಲ್ಲ ರಾಷ್ಟ್ರಗಳು ಒಪ್ಪಿಕೊಂಡು 1948 ನೆಡೆದುಕೊಂಡರೆ ಮಂತ್ರ ಸಾಧನ.

2) ಕತ್ತಿ ಸಮತೋಲನ :-

ಕತ್ತಿ ಸಮತೋಲನವು ವಿವಿಧ ರಾಷ್ಟ್ರ

- ಗಳ ಬಲದ ಸಂತರವನ್ನು ಕಡಿಮೆಗೊಳಿಸುವುದರಿಂದ, ಈ ತತ್ವವು ಯುಧ್ಧವನ್ನು ನಿವಾರಿಸಿ ಇಂತಿ ಸ್ಥಾಪನೆ ಮಾಡುವ
- ಕಠಿಣ ಸಹಾಯಕಿಯಾಗಿದೆ ಎಂದು ಹೇಳಬಹುದು. ಯುಧ್ಧದಲ್ಲಿ ತೋರಿದಾಗಲೇ 2 ಪಕ್ಷಗಳು ಸಮಾನ ಬಲವನ್ನು ಕೊಂಡಾಡಿ, ಲವುಗಳಲ್ಲಿ ನಾವು ಬಿಡಿಸುತ್ತೇವೆ ಎಂಬ ನಂಬಿಕೆ ಇರುವುದಿಲ್ಲ
- ಆದುದರಿಂದ ಲವುಗಳು ಯುಧ್ಧ ಮುಗಿದ ವನ್ನು ಬಿಟ್ಟು ತಮ್ಮ ಸಮಸ್ಯೆಯನ್ನು ಇಂತಿ ಯುತವಾಗಿ ಬಗೆ ಹಾಕಿಸಿ
- ಕೊಳ್ಳುವ ಪ್ರಯತ್ನ ನಡೆಸುತ್ತದೆ

3) ಸಾಮಾಜಿಕ ಭದ್ರತೆ :-

ಸಾಮಾಜಿಕ ಭದ್ರತೆ ತತ್ವದ ಪ್ರಕಾರವಾಗಿ, ಒಂದು

- ಆಕ್ರಮಣಕಾರಿ ರಾಷ್ಟ್ರವನ್ನು ಲನೇಕ ಸಂಘೋಷಿತ ರಾಷ್ಟ್ರಗಳು ಸೇರಿ ಎದುರಿಸುತ್ತದೆ. ರಾಷ್ಟ್ರಗಳು ಸಾಮಾಜಿಕವಾಗಿ ಆಕ್ರಮಣಕಾರಿ ರಾಷ್ಟ್ರದ ಯುಧ್ಧ ಲೋಕಾಟಿ ಮಾಡುತ್ತದೆ. ಈ ಸಮಾಜಾಯಿಕ ಯೋಧವನ್ನು ಎದುರಿಸಲಾಗದೆ, ಆಕ್ರಮಣಕಾರಿ ರಾಷ್ಟ್ರವು ಯುಧ್ಧ ಮಾಡುವ ತನ್ನ ಯೋಜನೆ ಯನ್ನು ಕೈ ಬೀಡಬಹುದು ಆದುದರಿಂದ ಸಾಮಾಜಿಕ ಭದ್ರತೆಯು ಯುಧ್ಧವನ್ನು ನಿವಾರಿಸಬಲ್ಲ ಒಂದು ಸಾಧನವಾಗಿದೆ.

4) ಯುಧ್ಧ ಸನ್ನಿಹಿತತೆ :-

ಯುಧ್ಧ ಸನ್ನಿಹಿತತೆ

- ಯುಧ್ಧ ಸನ್ನಿಹಿತತೆ ತಾವು ಯಾವ ಕಾರಣಕ್ಕೂ ಯುಧ್ಧ ಮಾಡುವುದಿಲ್ಲ ಎಂದು ತಮ್ಮ ಲ್ಲ ವಿವಾದಗಳನ್ನು ಇಂತಿ ಯುತವಾಗಿ ಬಗೆ ಹಾಕಿಸಿಕೊಳ್ಳುತ್ತೇ ಎಂಬ ಪಣಿವನ್ನು ತೊಟ್ಟು ಯುಧ್ಧ ಸನ್ನಿಹಿತತೆ ವನ್ನು ಕೈಗೊಂಡರೆ ಯುಧ್ಧವು - ಸುವ

ಸಂಭವ ಕಡಿಮೆಯಾಗುತ್ತದೆ.

5) ವಿಶ್ವ ಸರ್ಕಾರ :-

ಪ್ರಪಂಚದ ಎಲ್ಲ ರಾಷ್ಟ್ರಗಳೂ ಸಂಭವಿಸಿದಂತಹ ಒಂದು ವಿಶ್ವ ಸರ್ಕಾರವನ್ನು ರಚಿಸಿ ಲಯಾಲಕ ಯುಧ್ಧವನ್ನು ನಿರ್ಮೂಲನೆ ಮಾಡಿ ಶಾಂತಿಯನ್ನು ಸ್ಥಾಪಿಸಬಹುದಾಗಿದೆ. ಇಂದು ವಿಶ್ವ ಸಂಸ್ಥೆಯ ಚಿತ್ತಿತ್ತದಲ್ಲ ಇಂದು ಅದು ವಿಶ್ವದ ಅನೇಕ ಸಮಸ್ಯೆಗಳನ್ನು ಶಾಂತಿಯುತ ವಾಗಿ ಇತ್ಯಂತ - ಗೊಳಿಸುವುದು ಈ ಣಾ ಭಾವನೆಗೆ ಪೂರಕ ವಾಗಿದೆ.

6) ಶಸ್ತ್ರಾಸ್ತ್ರಗಳನ್ನು ಮಿತಿಗೊಳಿಸುವುದು :-

ರಾಷ್ಟ್ರಗಳು ಬೃಹತ್ ಪ್ರಮಾಣದಲ್ಲ ಶಸ್ತ್ರಾಸ್ತ್ರಗಳನ್ನು ಕೇವಲ ಮಾಡಿಕೊಳ್ಳುವ ಕಾರಣಗಳಿಂದ ಕಲವಾರು ಯುಧ್ಧಗಳು ಸಂಭವಿಸಿದೆ. ಆದುದರಿಂದ ಸಂಪೂರ್ಣ ನಿಷ್ಪ್ರಕರಣ ಸಾಧನೆ ವಾಗದಿಂದು ತಕ್ಕ ಮಟ್ಟಿಗೆ ಶಸ್ತ್ರಾಸ್ತ್ರಗಳ ಪ್ರಮಾಣವನ್ನು ಕಡಿಮೆ ಮಾಡಿಕೊಳ್ಳುವುದರಿಂದ ವಿಶ್ವದಲ್ಲ ಶಾಂತಿ ಸ್ಥಾಪನೆ ಸ್ಥಾಪಿಸಬಹುದು. ಒಂದು ರಾಷ್ಟ್ರವು ತಮ್ಮ ಶಸ್ತ್ರಾಸ್ತ್ರಗಳ ಪ್ರಮಾಣವನ್ನು ಕಡಿಮೆ ಮಾಡುವುದರಿಂದ, ನೆರೆ ರಾಷ್ಟ್ರಗಳ ಸಹ ತಮ್ಮ ಶಕ್ತಿಯನ್ನು ಕಡಿಮೆ ಮಾಡಲು ತಮ್ಮ ಶಸ್ತ್ರಾಸ್ತ್ರಗಳನ್ನು ಅನಿವಾರ್ಯವಾಗಿ ಕಡಿಮೆ ಮಾಡಲು ಬೇಕಾಗುತ್ತದೆ. ಇದರಿಂದ ಶಸ್ತ್ರಾಸ್ತ್ರದ ವೇಕರಣೆಯಲ್ಲ ನಡೆದು ಅಂದು ಅಂತಿಮವಾಗಿ ಯುಧ್ಧಕ್ಕೆ ಕಾರಣವಾಗುತ್ತದೆ.

7) ಅಂತರಾಷ್ಟ್ರೀಯ ಕಾನೂನು :-

ಅಂತರಾಷ್ಟ್ರೀಯ ಕಾನೂನುಗಳು ಯುಧ್ಧವನ್ನು ನಿಲ್ಲಿಸಬಹುದಾದ ಶಕ್ತಿಯನ್ನು ಕೊಡುತ್ತದೆ. ಕೇಲವು ಅಂತರಾಷ್ಟ್ರೀಯ ಕಾನೂನುಗಳನ್ನು ರಚಿಸಿ ಯುಧ್ಧವನ್ನು ಬಿಡಿಸಬಹುದು ಆದರೆ ಅಂತರಾಷ್ಟ್ರೀಯ ಕಾನೂನುಗಳನ್ನು

ರಚಿಸುವವರು ಯಾರು? ಎಂಬ ಪ್ರಶ್ನೆ ಉದ್ಭವಿಸುತ್ತದೆ.

ಅನುವಾದ ಎಲ್ಲ ರಾಷ್ಟ್ರಗಳು ಉತ್ತರಾಷ್ಟ್ರಿಯ
ಕಾನೂನು ರಚನೆಯಲ್ಲ ಭಾಗವಹಿಸಲು ಸಾಧ್ಯವಿಲ್ಲ, ಕೆಲವು
ರಾಷ್ಟ್ರಗಳ ದರು ಸೇರಿ ಬೆಳೆಸುತ್ತಿ ರಾಷ್ಟ್ರಗಳು ಒಪ್ಪುವಂತಹ
ಕಾನೂನುಗಳನ್ನು ಮಾಡಬಹುದು. ಇದರಿಂದ ಈ ಕಾನೂನುಗಳನ್ನು
ಉಲ್ಲಂಘಿಸಿದ ರಾಷ್ಟ್ರಗಳಿಗೆ ತಕ್ಕ ಕ್ರಮವನ್ನು ತೆಗೆದುಕೊಂಡು
ಉತ್ತರ ತಪ್ಪುಗಳ ಮುಂದಾಗದಂತೆ ನೋಡಿಕೊಳ್ಳಬೇಕು.

ಉಪ ಸಂಹಾರ:-
~ ~ ~ ~ ~

ಈ ಮೇಲೆ ತಿಳಿಸಿದ ಎಲ್ಲಾ ಅಧ್ಯಯನ ಮತ್ತು
ಯುಧವನ್ನು ನಿವಾರಿಸುವ ಸಾಧನೋಪಯಗಳು ಎಂದು
ಪರಿಗಣಿಸಲಾಗಿದೆ ಈ ಸಾಧನೋಪಯಗಳಿಂದ ಯುಧಗಳು
ಕಂಡ ತವಾಗಿಯು ನಿಲ್ಲುತ್ತದೆ ಎಂದು ಕಷ್ಟ ಸಾಧ್ಯ ಯಿಂದ
-ವರಗಿನ ಮನುಷ್ಯನ ಯುಧದ ಬೀಕಾರತೆಯನ್ನು ಅರ್ಥ
ಮಾಡಿಕೊಂಡು ಅದನ್ನು ತ್ಯಜಿಸಬೇಕೆಂದು ಮಾನ ಸಿಕ್ಕ
ಪರಿವರ್ತನೆ ಮಾಡಿಕೊಂಡು ಯುಧವನ್ನು ಎಲ್ಲಯವ
-ರಗು ತ್ಯಜಿಸುವುದಿಲ್ಲವು ಅಲ್ಲಿಯವರೆಗೆ ಯುಧವನ್ನು
ಸಂಪೂರ್ಣವಾಗಿ ನಿವಾರಿಸಲು ಸಾಧ್ಯವಿಲ್ಲ ಎಂದು ಈಚ
-ಬಹುದು.

THE END
~ ~ ~ ~ ~

D.V.S Arts and Science college

Sanskrit
Assignment

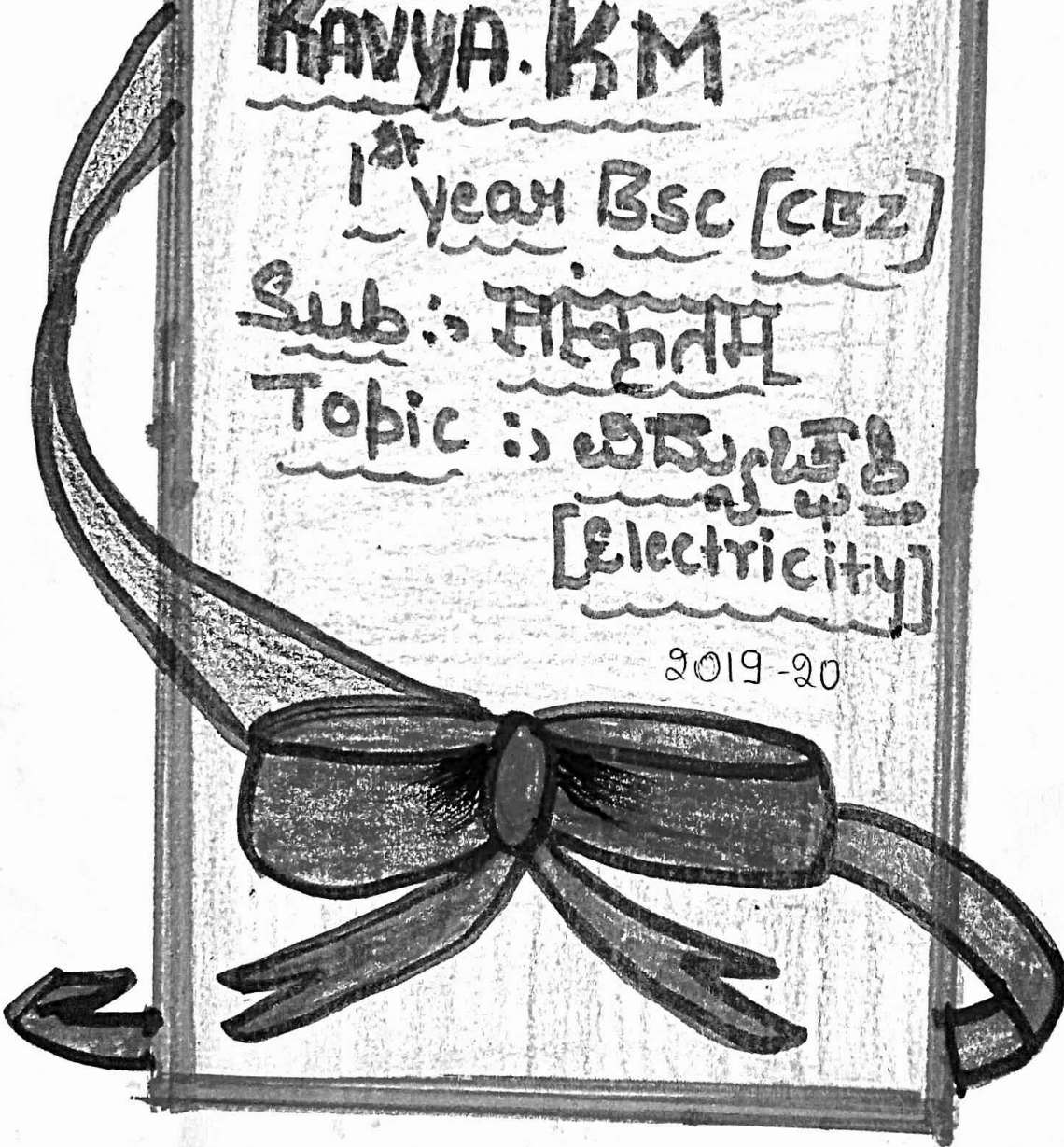
KAVYA. KM

1st year Bsc [CBZ]

Sub: हिन्दी

Topic: विद्युत
[Electricity]

2019-20

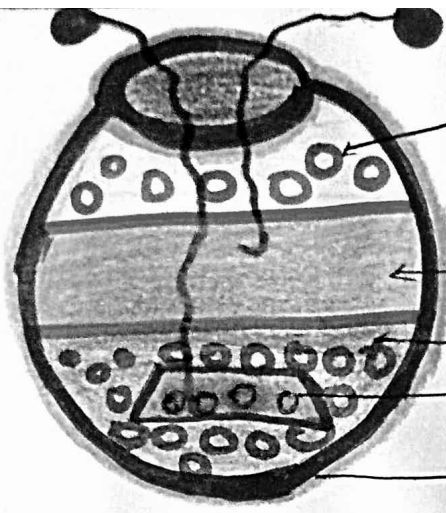


ವಿದ್ಯಾಚರಿತೆ

ಸಂಘಾಪ್ಯ ಮೃಷಯ ಪಾತ್ರೇ ತಾಮ್ರಪತ್ರಂ ಮುಸಾಂಕೃತಮ್ ।
 ಛಾಯಾಚ್ಚಾಮಿಗ್ರೀವೇನ ಚಾರ್ಧಾಶಿಃ ಕಾಷಾಪಾಂಸುಶಿಃ ॥
 ದಂತಾಲೋಕೋ ನಿಧಾನ್ವಯಃ ಪಾರದಾಚ್ಚಾದಿತಸ್ತಾಃ ।
 ಸಂಯೋಗಾಜಾಯತ ನೌಜೊ ಮಿತ್ರಾವರೂಪಾಸಂಜಿತಮ್ ॥

ನೊನ್ನೊಪ್ಪ ವ್ಯುನ್ನಯಂ ಪಾತ್ರಂ ತಾಮ್ರಪತ್ರಂ ಮುಸಂಕೃತಂ ।
 ಛಾಯೇಶ್ಚ ಶಿಖಿಗ್ರೀವೇನ ಚಾರ್ಧಾಶಿಃ ಕಾಷಾಪಾಂಸುಶಿಃ ॥
 ದಂತಾಲೋಕೋ ನಿಧಾಯಾಂತಃ ಪಾರದಾಚ್ಚಾದಿತಸ್ತಾಃ ।
 ಉತ್ತೇದಯತಿ ತನ್ನಿತ್ರಂ ಸಂಯೋಗಸ್ತು ವ್ಯುನ್ನಯೋಃ ॥
 ಸಂಯೋಗಾಜಾಯತೇ ಕೇಜೋ ಯನ್ನಿತ್ರಯತಿ ಕಥ್ಯತೇ ।
 ಏವಂ ಶತನಾಂ ಕುಂಭಾನಾಂ ಸಂಯೋಗಃ ಕಾರ್ಯಕೃತೃ ಸ್ವತಃ ।
 ಮುನಂವ್ಯಷ್ಟೌ ಚ ಸುಭಗಾ ಕೃತಯೋನಿಃ ಪಯೋಧರಾ ।
 ವ್ಯುತ್ಪನ್ನೋ ನವೇದಾ ಗ್ರಾಹ್ಯಾ..... - ಭಗವತ್ಪ್ರಸಂಗೀತಾ(ಶ್ಲೋ. ೧. ೧೪)

ಮಣ್ಣಿನ ಪಾತ್ರೆಯನ್ನು ಇಟ್ಟು ಹಿಡಿಯಾಗ್ಗೆ ತ್ರಮದ ತಗಡನ್ನು ಸಂಸ್ಕರಿಸಿ ಇಡಬೇಕು. ಇದರೊಳಗೆ ಹಿಡ್ಡೆಯಾದ ಮೂದ ಪುಡಿಯನ್ನು ಪ್ರಾಣವಾಗಿ ಇಡಿ. ಒಳಗಡೆಗೆ ತ್ರಮದ ತಂಟಿಯನ್ನು ಮಡಕೆಯ ಒಳಗೆ ಇಳಿಸಬೇಕು. ಹಾಗೂ ಮಡಕೆಯ ಒಳಗೆ ಪಾದರಸದಿಂದ ಕೂಡಿದ ನತುವನ್ನು ನೇರಬೇಕು. ತ್ರಮ ಹಾಗೂ ಕಪರ್ ಸಲ್ಫೇಟ್ [ನವಿಲನ ಕುಕ್ಕಿಗೆ ಕಪರ್ ಸಲ್ಫೇಟ್‌ವನ್ನು ಹೊಂದಿರುತ್ತಿತ್ತು ಈ ಪಾದರಸದಿಂದ ಕೂಡಿದ ನತು ಇದೆಲ್ಲದರಿಂದ ಕೂಡಿದ ಮಡಕೆಯನ್ನು ಘೂಟಿಯಾಗ್ಗೆ ಇನ್ನಿಹಾಗ ಇದಕ್ಕೆ ಒಳಗಿನಿಂದ ವಿಲ್ಲದರ ಸಂಯೋಗದಿಂದ (ಬೆಳಕು) ತೇಕು. ಉತ್ಪತ್ತಿಯಾಗುತ್ತದೆ. ಹೀಗೆ 100 ಮಡಕೆಗಳನ್ನು ಹೋಡಿಸಿ ಇದೇ ಕಾರ್ಯತಂತ್ರವನ್ನು ಭಿನ್ನವಿಧವಾಗಿ ಅದ್ವೈತ್ಯಕ್ಕೆ ಉತ್ಪತ್ತಿಯಾಗುತ್ತದೆ.



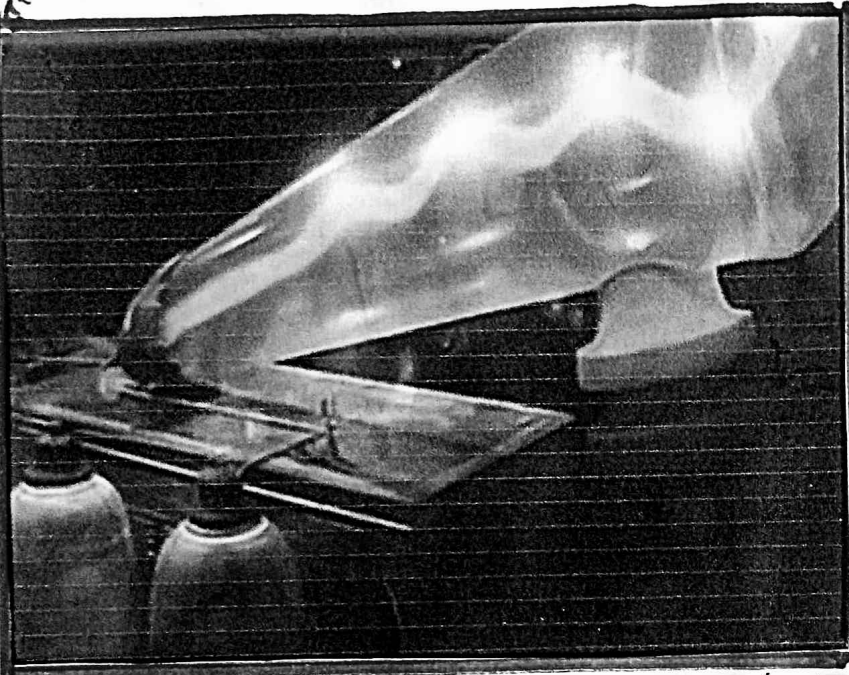
ಪ್ರಾದರಸಣದ ಕೂಡಿದ ಸಕ್ಕ

ಬದ್ಧಿಯಾದ ಮರದ ಮುಡಿ

ತಾಮ್ರ (ಕಪ್ಪೆ) ನಲ್ಲೇಟ್ (ಕಬ್ಬಿಣ) (ಕಬ್ಬಿಣ)

ತಾಮ್ರದ ತಗ್ಗು

ಮಣಿನ ಮಡಿಲೆ



Agastya Samhita Experiment
 "Place a well cleaned Copper plate in an earthenware vessel cover it first by Copper Sulfate and then by moist sawdust, After the put a mercury - amalgamated zinc sheet on top of the sawdust to avoid polarization, The contact will produce an Energy known by the twin name of Mitra - Varuna, water

will be split by this current into Pranavayu and Udanavayu, A chain of one hundred jars is said to give a very effective force".



Introduction of Rishi Agastya



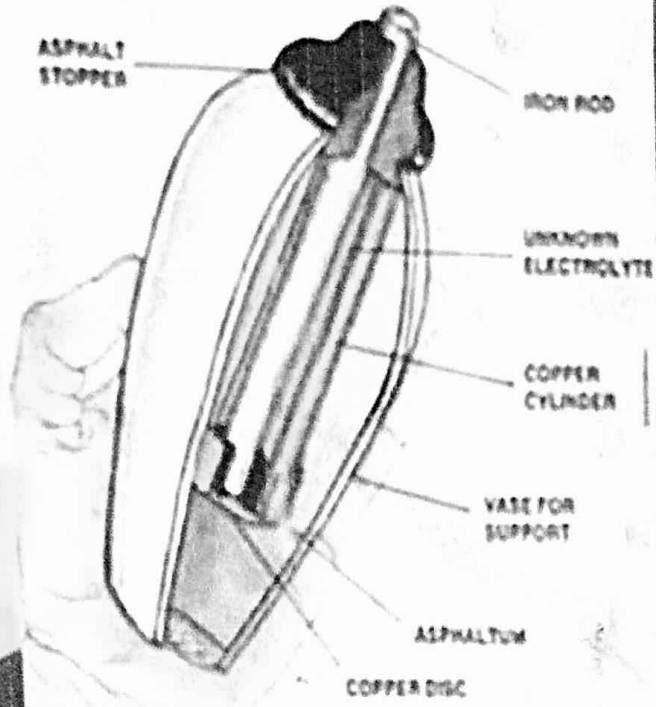
Rishi Agastya is one of the Seven Saptarishis,

According to Puranas, he was born in a Kumbh (Pitcher) from the Semen of Varuna & Mitra. He is considered the father of Tamil literature. He is attributed many mantras of the first Veda, the Rigveda. He made a pioneering contribution in the field of Ayurved and Jyotish, Kalita Sahastranam, which praises the Goddess through her thousand names was revealed to Sage Agastya

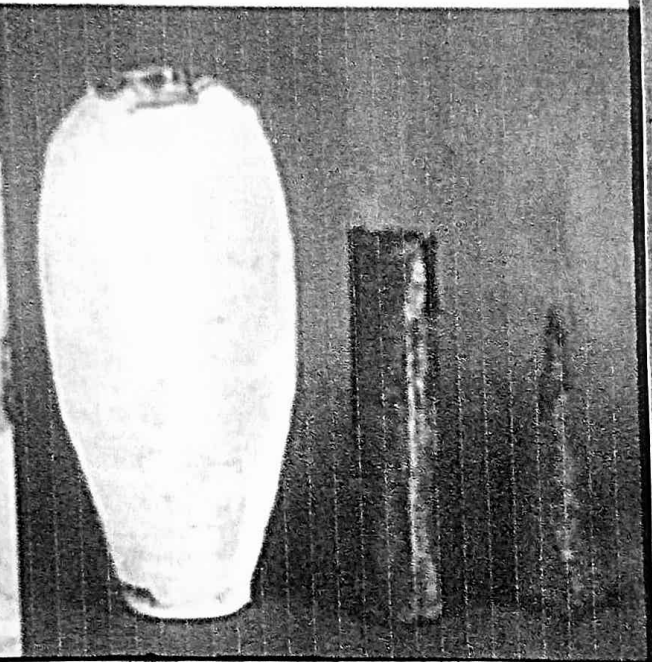
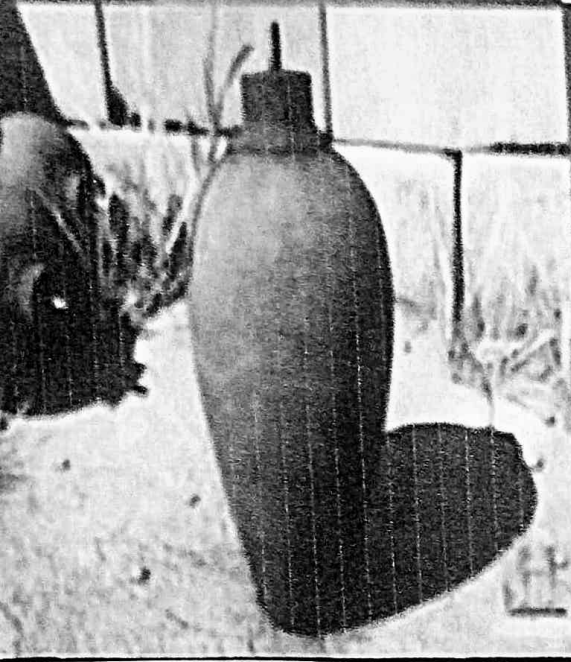
by Hayagriva, an incarnation of Lord Vishnu. Aditya Hridayam, a hymn to Surya Deva, was composed by Sage Agastya. He brought it to Shri Ram just before war with Ravan. He also composed the Saraswat Stotram. According to Ramayana, he is a unique sage, short and heavy in built, who by living in South, balances the powers of Lord Shiv and weight of Kailash and Mount Meru.

Lord Ram stayed at Agastya Ashram during his exile. The Sage gave him three gifts: a bow made by Vishvakarma for Lord Vishnu, an inexhaustible quiver and a sword. He killed demons Utabi and Ilwala after they jointly misled and destroyed 9,000 men. He is regarded as the founder and patron saint of Silambam and Varmanan ancient science of healing and the Southern martial art - Kalariyayal, which he learnt from Lord Kartikeya himself.

BAGHDAD BATTERY



We found
the pictures
of Ancients
used the
Battery



Pictures of Ancient

Name : Priyanka B.S.

Class : 1st Bsc PMCs

Subject :- Sanskrit

To :

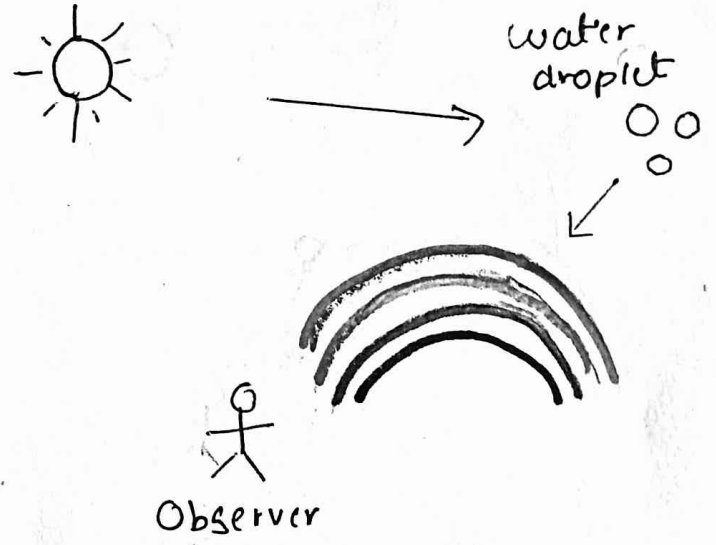
Achyuth Sir

Date : 16-03-2021

ರಾಮನ ಬಿಲ್ಲು

ರಾಮನ ಬಿಲ್ಲು ಎಂಬುದು ದೃಶ್ಯ ಜ್ಞಾನಿಕ ಮತ್ತು ಪವನ ಶಾಸ್ತ್ರದ
 ಅಧ್ಯಯನವಾಗಿದ್ದು, ಭೂಮಿಯ ವಾತಾವರಣದಲ್ಲಿನ ತಣ್ಣಗಿನಿಗಳ
 ಮೇಲೆ ಸೂರ್ಯನು ಬೀಳಿದಾಗ ಆಕಾಶದಲ್ಲಿ ಬೀಳಿದ ಬಿಲ್ಲುಗಳ ದೆಟ್ಟಿಯೆಂದು
 ಕಾಣಿಸುವಂಥ ಒಂದು ವಿದ್ಯಮಾನವನ್ನು ಇದು ಉಂಟು ಮಾಡುತ್ತದೆ. ಒಂದು ಬಹುವ-
 ಣೀದ ಬಿಲ್ಲಿನ ಸ್ವರೂಪವನ್ನು ತಳೆಯುವ ಇದು ತನ್ನ ಹೊರಗಿನ ಭಾಗದಲ್ಲಿ
 ಕೆಂಪು ಬಿಲ್ಲವನ್ನು ಒಳಗಿನ ವಿಭಾಗದಲ್ಲಿ ನೀಲಿ ಬಿಲ್ಲವನ್ನು ಹೊಂದಿರುತ್ತದೆ.
 ಒಂದು ಅನುಭವವಾಗಿರುವ ಬಿಲ್ಲುಗಳ ರೂಪವನ್ನು

ಒಂದು ಮಳೆಬಿಲ್ಲು ವ್ಯಾಪಿಸಿಕೊಳ್ಳುತ್ತದೆ;
 ಇದರ ವಿಶಿಷ್ಟ ವಿಶಿಷ್ಟ ದೆಟ್ಟಿಗಳು
 ಮಾನವನ ಮೋಕ್ಷ ಕಲ್ಪನಾಚಕ್ರದ ಒಂದು
 ಕಲಾಕೃತಿಯಂತೆ ಭಾಸವಾಗುತ್ತದೆ.
 ಸ್ಕೂಟರ್‌ನ ಸೆಪ್ಟಿಂ ರಹವಾದ ಕೆಂಪು
 ತಿತ್ತಳೆ, ಹಳದಿ, ಹಸಿರು, ನೀಲಿ, ಊದಾ-
 ನೀಲಿ ಮತ್ತು ನೀಲಿಯು ತೀಯಲ್ಲ



ಇರುತ್ತದೆ (ಶ್ರೀಣಿಯ ಶ್ರಮವನ್ನು ROYGBIV- ತೀಯು ನೆನಪಿನ ನಾಥನಗಳಿಂದ
 ಜನಜಿಯವಾಗಿ ಕಂಠಪಾಠ ಮಾಡಲಾಗುತ್ತದೆ.) ಮಳೆಯನ್ನು ಹೊರತು ಪಡಿಸಿ
 ನೀರಿನ ಇತರ ಸ್ವರೂಪಗಳಿಂದಲೂ ಮಳೆಬಿಲ್ಲುಗಳು ರೂಪು ಗೆಗಳಬಹುದಾಗಿದ್ದು
 ಮಂಜು, ತುಂತುರು ಹನಿ, ಮತ್ತು ಇಬ್ಬನಿ ಈ ಸ್ವರೂಪಗಳಲ್ಲ ನೆಲೆವೆ.

ಸೂರ್ಯನನ್ನು ವಿವಿಧವರ್ಣ: ಪವನೇನ
 ವಿಭಜಿಸಿ: ಕಠಾ: ಸಾಚ್ಛೇ |
 ಅಯತಿ ಧನು: ತಂತ್ವಿನಾ:
 ಯೇ ದೃಶ್ಯಾಂತೇ ತಂದ್ರಂಧ್ರಧನು: ||

Formation of Primary & Secondary rainbow

Primary rainbow results in three steps process which are refraction, reflection & refraction. The small drop acts as a prism.

It can be explained with the help of two drops. We see that

red light from drop 1 & violet light from drop 2 reach

observer's eye. In this case, violet

light from drop one & red light

from drop 2 are directed at

different levels. As a result, the

observer sees a rainbow with

red color at the top & violet color at bottom.

Secondary rainbow as in fig (b) is formed in four step process: refraction, reflection, reflection & refraction. When light rays

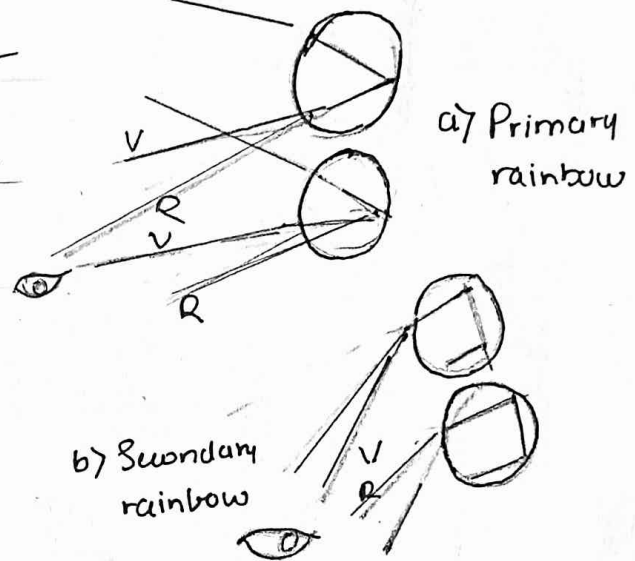
undergo reflection twice inside the drop, then secondary

rainbow is formed. Hence intensity of light is reduced at

secondary reflection, therefore, secondary rainbow is fainter

than primary one. Moreover the order of color get reversed

in case of secondary rainbow.



D.V.S COLLEGE OF ARTS AND SCIENCE

From,

Chandana.K

2nd year Bsc [CBZ]

3rd sem

D.V.S college of arts
and science

Topic :- zoology assignment

To,

Department of zoology
D.V.S college of arts
and science.

2016-17

Paper - III - Ecology, Ethology and Biodiversity.

Question paper number - 01

± Answer any five of the following questions.

1) What is Mutualism? give an example.

→ It is an association between two organisms belonging to different species, where both depend on each other and cannot live without the association.

ex:- Lichens:- The association of algae and fungi together forms lichens, where algal members (phycobiont) supply food whereas fungi (mycobiont) provide protection, water and minerals to algae.

2) What are lentic and lotic ecosystems?

→ The lentic ecosystem is the freshwater ecosystem which includes all standing water bodies like lakes, ponds, swamps or bogs.

The lotic ecosystem is also the freshwater ecosystem which includes running or flowing water bodies like rivers, springs, and creek. The subject of study of freshwater ecosystem is known as limnology.

3) What is Natality and Mortality?

→ Natality is also known as birth rate. It is the rate of production of new individuals per unit of population per unit time through birth, hatching, germination or vegetative propagation. Natality (birth rate) is calculated as number of births in a year per thousand individual.

$$\text{Natality} = \frac{\text{Number of births}}{\text{Total no. of individual in population}} \times 1000$$

The mortality refers to the death rate. The ratio of the total number of deaths to the total population, the ratio of deaths is an area to the population of that area, expressed per 1000 per year.

4) What are endangered species? Give an example.

→ A species of animal or a plant that is seriously at risk of extinction is called endangered species.

eg:- slender, tiger, great Indian Bustard

5) State I and II law of thermodynamics?

→ 1st law :- energy can be changed from one form to another, but it cannot be created or destroyed, the total amount constant, merely changing from one form to another.

2nd Law = In all energy exchange if no energy enters or leaves the system, the potential energy of the state will always be less than that of initial state.

6) Mention any two Biosphere reserves of India?

→ Nilgiri biosphere, Gulf of Mannar, Nanda Devi.

7) Expand IUCN and GIS?

→ IUCN - International Union for Conservation of Nature

GIS - Geographic Information System

II Answer any four of the following questions:

9) Mention the Application of GPS in ecosystem?

GPS is made up of three parts, satellite orbiting the earth, control and monitoring stations on earth, and GPS receivers.

→ Space segment :- constellation of operating satellite that transmit one way signals that give position and time.

→ Control segment :- consist of worldwide monitoring and control stations that maintain the satellite in their proper orbits.

user segment :- consist of the GPS receiver equipment which receives the signals from the GPS satellites and use the transmitted information to calculate the user 3D position it.

- > To sustain the earth's environment exhibit while belonging human needs requires better planning with more update information, the global positioning system helps in gathering accurate and timely information about our environment.
- > GPS data collection system is helpful to make analysis of environment issues, environmental positions and travels.
- > GPS technology helps to understand and forecast changes in the environment.
- > GPS tidal tracking and measurement helpful to assess the effects of ocean tides.

10) Explain laws of limiting factors.

-> 3 laws of mechanism of law limiting factors.

1) Law of minimum :- The law was proposed by Liebig in 1840. Here organisms are exposed to a variety of environmental factors, certain factors are present in the smallest quantity.

According to Liebig - growth and reproduction of organisms are depend on the factors that is present in minimum quantity, in the environment this is called Law of minimum.

2) Law of tolerance / Shelford Law of tolerance

This law was proposed by Shelford in 1923. He noted a weakness or draw back in Liebig's law and proposed law of tolerance, According to this law organism and exposed to a variety of environmental factors like light, temperature, nutrients etc.

3) combined concept of limiting factors:- This law was proposed by Odum in 1971. It states that "the presence and success of an organism or a group of organisms depend on a complex of conditions. The organisms are controlled in nature by,"

- (a) the quantity and variability in materials for which there is a minimum requirement.
- (b) the limits of tolerance of the organisms themselves to these factors and other components of the environment.

11) write a note on ecological succession?

→ orderly, directional replacement of communities from one kind to other during course of time due to the changes in physical environment called ecological succession.

Main feature of ecological succession:-

- ecological succession is gradual, slow and continuous process till the emergence of stable community - climax community.
- entire sequence of community during ecological succession is called sere.
- First community appears during ecological succession called ~~the~~ pioneer community.
- pioneer community → several communities - climax community.

characteristic principles of courtship behaviour.

- courtship is a heterosexual communication leading to the act of mating.
- courtship display is an extension of this male-male competition in which males evolved various devices and techniques to persuade female to produce, hence males play an active role in courtship to initial sexual interaction.
- nature of courtship behaviour varies greatly among animals, in most of the cases it contains the element of conflict b/w males and female or b/w two males.
- courtship behaviour decreases after mutual mating, it also decreases during ill health/physical weakness.
- Among seasonal breeders courtship behaviour exhibit during season, absent in off season (Frog shows only during monsoon season).
- A courtship behaviour involves singing, dancing, nesting in many animals.
- courtship is a complex behaviour controlled by several factors, sex hormones play a major role.

Courtship behaviour in 3-spined stickleback fish.

Three-spined stickleback fish (Gasterosteus) is found in freshwater bodies, male is bluish-black in colour with red belly while female is drab in colour, characteristic courtship behaviour derived in male three-spined stickleback fish involved visual display and nesting are as follows.

- During breeding season male turn into red belly and olive green back and get isolated from groups.
- Male finds a place in sandy bottom where there are weeds, male builds a tunnel-like nest in sand among weeds, algae, roots and stem of water plants, nesting materials glued with mucus.

- * After making nest it start depending territory around the nest, other males are attracted and chased away aggressively.
- then male swims near the surface over the nest to invite female, It performs dance in front of moving group of fishes, nature female responds to this dance.
- male swims upward from below over the nest to invite female, It performs dance, below his dorsal spine, when response of female is positive both of them swim in zig-zag fashion towards the nest male shows the entrance of nest by lying down in front of the nest and pointing head towards nest.
- If female like the nest it enters inside and male follows, male prompts the female to release eggs.
- Male then deposits his sperm over the eggs and female is chased away.

16) write a note on.

(a) Desert biome:-

Desert forms 1/5 of earth's land surface where annual rainfall is less than 50mm. High degree of diurnal temperature fluctuations 5°C - Hot. hot days and cold nights.

- Low humidity and high rate of evaporation.
- Nutrient poor soil, cannot hold water, less productive desert biota and their adaptations. prostrate type annual grasses grow rapidly finish their life cycle within few days after a rainfall they will remain in seed form during summer, succulents are plants of

12) Explain the parental care in Hippocampus and Racophorus.

→ In Hippocampus male take the responsibility of receiving eggs till they hatch, male have abdominal brood pouch for raising young one, brood pouch is formed from fusion of pelvic fin in male. Female lay egg into the brood pouch of male, In Seahorse only male undergo a pregnancy, fertilised eggs are placed after courtship. Brood pouch carrying eggs get closed by a flap of skin. Inside brood pouch get egg are autoregulated, nourished by specially adapted structures, highly vascularised dermis inside brood pouch maintain temperature required for the development egg.

In Racophorus malabaricus is endemic to the western ghats of India, a bright green coloured frog inhabit evergreen, and semi-evergreen forests and build arboreal foam nest, male make mating call by sitting on the tree branch near a water source, as a female approaches male grasp female resulting in axillary ampullae, Female chose the leaf of a tree overhanging a water body for spawning, During spawning the female submerge the back for the male by sewing her hind limbs, the male release seminal fluid and agitates it to form the foam, later the female holds the leaf containing the foam nest with its forelimbs and starts collecting leaves one after another from the surrounding to cover the foam all side.

13) elucidate the tolerance of laws of thermodynamic energy flow in ecosystem.

→ The laws of thermodynamics govern energy flow energy exists in many forms such as Heat, light, chemical energy and electrical energy. energy is the ability to bring about change or to work. Thermodynamics states that energy cannot be created or destroyed but it can be only changed from one form to another, discovered law states that in all energy transfers, some energy will dissipate as that the heat, the glow to energy maintain order of life. This energy loss of constant pattern. In this fact ecosystem

have calculated that the percentage of usable energy transferred from one organism to another is 10%, that means that 90% of energy is lost

as that heat, so if there only about 1000 calories will be available to support primary consumer and only about 100 calories to support secondary consumer or omnivore. This is also known as 10% law. energy loss in transfer b/w trophic level. In the Arctic eskimos hunt whale for food, whale eat tons of microscopic algae. It requires 100 calories of plankton which is what is whale use to produce 10 calories of blubber to its body, finally these 10 calories of whale blubber, contain enough energy to give eskimos one calorie of energy.

DVS COLLEGE
OF ARTS & SCIENCE

2017-18

From :

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Topic : CARNIVOROUS BIRDS

To :

Dept. of zoology

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CARNIVOROUS BIRDS...

INTRODUCTION :

"Carnivorous" describes a diet that consists primarily, though not always exclusively, of meat. Food or prey typically includes mammals, birds, insects, amphibians, fish or reptiles, and it is obtained either through hunting or scavenging.

Birds of prey such as hawks, falcons, eagles, osprey, vultures, owl, kite are familiar carnivorous birds. Birds rarely eat just one type of meat, and many will choose whatever prey is convenient or easiest to catch.

Carrion is also a popular food source for carnivorous birds, particularly vultures, and could be a discarded hunting carcass or entrails, road kill or any animal that may have died from a illness, accident or injury.

Some carnivores, such as wolves, hunt in a group called a pack. They move silently and slowly to form a circle around their prey before they attack.

EAGLE ...

History :

The Native Indians saw the Eagle as a symbol for great strength, leadership and vision. As if to seemingly mirror this, the eagle has been used to a 'banner' by many of the great empires throughout history, from Babylon to Egypt, through to Rome and even the United States.

In ancient Aztec tradition, the chief god told people to settle at a place where they find an eagle perched on a cactus eating a snake. This place is now Mexico City. The eagle was a strong emblem in the Roman Empire.

Scientific classification

- Kingdom : Animalia.
Phylum : Chordata.
Class : Aves.
Order : Accipitriformes
Family : Accipitridae.

Eagle is the common name for many large birds of prey of the family Accipitridae. Eagles belong to several groups of genera, not all of which are closely related. Most of the 60 species of eagle are from Eurasia and Africa. Outside this area, just 14 species can be found - 2 in North America, 9 in Central and South America, and 3 in Australia.

Biological Characteristics:

Eagles have a beauty and grace fitting their status as our national emblem. As with most birds of prey, the female eagle is larger and heavier than the male. They weigh an average of 12 pounds with a wingspan up to seven feet and a body length of nearly three feet. The bulk of an eagle is its feathers. Its bones are hollow and much lighter than the bones of mammals.

Golden eagles typically have larger bodies and shorter wingspans compared to bald eagles. Adult bald eagles are easily detected by their brilliant white heads and tail feathers and chocolate brown bodies and wings. They have black talons and yellow eyes, beaks and feet. Immature

Bald Eagle's Adaptations:

Eyesight

The bald eagle's eyesight is four to eight times better than that of a human. Eagles also have a bony ridge above their eyes that minimizes glare from the sun.

Catching prey

It's crucial to spot your prey, but if you can't grab it you won't be eating dinner. A series of bumps on the bottom of their feet known as spicules - help them hold on to their prey during flight.

Eating

In addition to talons, they use their beaks. They primarily eat fish - although also some birds, mammals and reptiles and their beaks are tough enough to tear and eat the flesh of larger prey bite by bite.



Reproduction in Eagle:

Eagles reproduce by engaging in a courtship process that includes courtwheeling and circling in the air, copulation and nesting, where both the male and female eagle build the nest. Eagles typically mate for life, and they usually use the same nest site year after year as long as they have successfully produced and protected offspring at the location.



while the courtship processes occur while the eagles are flying, copulation typically occurs in the nest. The male mounts the female and the male and female cloaca touch, which is referred to as the cloacal kiss. The female typically lays the fertilized eggs about 5 to 10 days after successful copulation.

KITE ...

History And Habitat:

Swallow-tailed kites breed in swamps, lowland forests, and marshes of the southeastern United States, primarily in Florida and South Carolina. They require tall trees for nesting and open areas full of small prey to feed their nestlings. Nesting and foraging habitat includes slash pine wetlands, edges of pine forest, cypress swamps, wet prairies, freshwater and brackish marshes, hardwood hammocks and mangrove forests.

Swallow-tailed kites are usually found at low elevations, but members of the southern subspecies often breed in cities more than a mile high, given adequately humid conditions.

Scientific Classification

- Kingdom : Animalia
- Phylum : Chordata
- Class : Aves
- Order : Accipitiformes
- Family : Accipitridae

Physical Characters :

Black kites are medium-sized raptors, weighing 560g on average. Body length ranges from 47 to 60cm, with an average wingspan of 140 to 160cm. Their dorsal coloration is mostly brown, which fades to a darker brown towards the tips of the wings and tail.

Black kites have small, bead-like dark brown eyes and a large black, hook-shaped beak for tearing flesh and consuming their prey. The outer edge of their wings appears to be "fingered". Black kites are often called "folk-tailed kites" because of the distinct shape of their tails. Tail coloration is mostly brown, with darker brown striped feathers. Black kites have long black talons and pale yellow legs. Humans have not domesticated kites in anyway



D.V.S. COLLEGE OF ARTS & SCIENCE

2018-19

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Topic → Vocal response and communication
in mammals

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Introduction

Animal communication is the transfer of information from one or group of animals to one or more other animals that affects the current or future behavior of the receivers. Information may be sent intentionally, as in a courtship display, or unintentionally, as in the transfer of scent from predator to prey. Information may be transferred to an audience of several receivers. Animal communication is a rapidly growing area of study in disciplines including animal behaviour, sociology, neurology and animal cognition. Many aspects of animal behaviour, such as symbolic name use, emotional expression, learning and sexual behaviour, are being understood in new ways.

Communication is a rapidly growing area of study in disciplines. When the information from the sender changes the behaviour of a receiver, the information is referred to as a "signal". Signalling theory predicts that for a signal to be maintained in the population, both the sender and receiver should usually receive some benefit from the interaction. Signal production by senders and the perception and subsequent response of receivers are thought to co-evolve. Signals often involve multiple mechanisms both visual and auditory, and for a signal to be understood the coordinated behaviour of both sender and receiver require careful study.

Vocal response

In most terrestrial mammals the larynx at rest is positioned high up in the throat, but in humans the larynx is positioned relatively low in the neck. In chimpanzees and even more so in other primates, the larynx connects with the nasal passage at rest and its entrance is within the nasal cavity, so that food passes on both side of the laryngeal tube in the centre of throat.

Although in mammals the food passes and the air passage cross each other in the pharynx the food passage are fully separated most of the time, so that most mammals can swallow fluids and breathe simultaneously.

A lowered larynx is seen in a few aquatic mammals such as dugongs & manatees. but is probably less frequent in terrestrial mammals. Some mammals like red deer, hammerhead bats, walrus and koalas, have a permanently low larynx but have evolved a long and elastic velum which connects the nasal cavity with the larynx, when at rest. This is lacking in humans. The larynx or voice box, placed in the thyroid cartilage is an organ in the neck of mammals involved in protection of the trachea and in sound production.

Communication

Communication is simply that act of transferring information from one place, person or group to another. Every communication involves at least one sender, a message and a recipient. This may sound simple, but communication is actually a very complex subject.

The transmission of the message from sender to recipient can be affected by a huge range of things. These includes our emotions, the cultural situation, the medium used to communicate, and even our location. The complexity is why good communication skills are considered so desirable by employers around the world.

As this definition makes clear, communication is more than simple transmission of information. There requires an element of success in transmitting or imparting a message whether information, ideas or emotions. A communication, therefore has three parts the sender, the message and recipient.

The sender encodes the message usually in a mixture of words and non verbal communication. It transmit in some way and the recipient decodes it. In effective communication understands their audience, chooses an appropriate communication channel, hones their message for this particular channel and encodes the message effectively to reduce misunderstanding by the recipients.

Types of animal communication

Animals may not be able to speak in master language techniques, but they certainly are able to communicate with one another. Their survival depends on it. Animals generally communicate using four methods.

a) Visual communication

Visual communication for animals comes in two forms: badges and displays. Badges, the colour and shape of the animal, are structural adaptations, such as the bright yellow feathers of the male American goldfinch. The bright colours tell a prospective mate the male is a suitable choice. Displays are the behaviours animals exhibit, such as the glow of a firefly to attract mates or when a dog wags his tail to let you know he's happy.

Visual communication is the least effective since the animals must be close enough to see one another.

b) Auditory Communication

Barking, growling, hissing and purring all are considered animal auditory communication. Sounds can be used to attract mates, ward off threats and express happiness or pain.

For example, a dog barks when approached by a stranger. Red squirrels use a series of rattles,

Screenches and yips to warn intruders to stay away. And dolphins used auditory communication to let themselves apart from others - a unique whistle that also helps them locate food.

c) Tactile Communication

Like humans, animals can rely on tactile communication touch - to convey messages. Most animals use this form of communication to show affection, fear or even to establish dominance. For instance, horses will kick each other to threats off or when competing for kittens, cats will nuzzle their mothers to affection. Many species of primates with each other to bond and show affection.

d) Chemical Communication

For some species of animals, communication is about pheromones or chemical markings. They will leave their own scents to mark their territories, ward off predators or attract a mate.

The most well-known example is that of Skunks 'spraying' their signature scents when threatened. Cats will rub against objects to make their territories, leaving scent markers from their mouths.

Vocal response and communication in

a) Rabbit

- by rabbit dance → when rabbits are very excited or happy, they play a distinctive dance that is sometimes called binkying. A binkying rabbit will be full of the joys of spring, bounding about jumping up high and twisting about in the air, kicking their feet out.
- zooming around → you have probably seen a dog or a cat having a "punny five minutes" when they suddenly start to zoom around and act crazy for no particular reason, before plumping rabbits do exactly the same thing.
- flopping down → Rabbits have sheets bursts of energy and then like to have a little nap. So you may sometimes spot your rabbit all of sudden just flopping down as if they are exhausted, and having a little rest.
- licking and grooming → Rabbits can clean little animals that spent lot of time grooming their own coats. social groups. rabbit will also groom other. this indicates the great compliment and trust. love.

- Thumping - Rabbits will sometimes kick the ground with their hind legs, which produce a kind of thumping sound. This serves as a method of communication with other rabbits in the area, and may mean that your rabbit feels unsafe or threatened, and is trying to warn others.
- Squeaking → hopefully you will never even hear a rabbit squeak, because squeaking is a sign of serious pain or extreme fear. Rabbits have very small fast beating little hearts, and significant stress, pain or fear can kill them.



In greeting when you come home, when she meets up with you in the house and when you speak to her.

- to ask for food → most cats like to eat, and they can be quite demanding around mealtimes. Some cats learn to meow whenever anyone enters the kitchen. Just in case food might be farth coming, other meow to wake up to serve them food.
- To ask to be let in or out → meowing is the cat's primary way to let you know what she wants. If she wants to go outside, she will likely to learn to meow at the door.
- Elderly cats → Suffering from mental confusion or cognitive dysfunction, may meow if they become disoriented - a frequent symptom of this beta version of Alzheimer's disease. for more, see this article
- To find a mate → Reproductively intact cats are more likely to yell females yell to advertise their receptivity to males, and males yell to gain access to females
- To solicit attention → cats enjoy social contact with people, and some will be quite vocal in their request for attention. the cat may want to be stroked, played with or simply talked to. cats who are left alone for long periods of time each day may be more likely to meow for attention.

Vocal response and communication in

a) Rabbit

- by rabbit dance → when rabbits are very excited or happy, they play a distinctive dance that is sometimes called binkying. A binkying rabbit will be full of the joys of spring, bounding about jumping up high and twisting about in the air, kicking their feet out.
- zooming around → you have probably seen a dog or a cat howling a "funny blue minutes" when they suddenly start to zoom around and act crazy for no particular reason, before plumping rabbits do exactly the same thing.
- flopping down → Rabbits have sheds bursts of energy and then like to have a little nap. So you may sometimes spot your rabbit all of sudden just flopping down as if they are exhausted, and howling a little rest.
- licking and grooming → Rabbits can clean little animals that spent lot of time grooming their own coats. social groups. rabbit will also groom other. this indicates the great compliment and trust. love.

b) Cat



Cats are very social. They greet each other through nose touches. They show affection by rubbing their heads against each other and along the sides of their bodies. Sometimes cats may be hook their tails and rub them together.

The cat meow is her way of communicating with people. Meowing is an interesting vocalization in that adult cats don't actually meow at each other, just at people. Kittens meow to let their mother know they're cold or hungry, but once they get a bit older, cats no longer meow to other cats.

The following reasons are the most common reason why cats meow are.

- To greet people → your cat can be expected to meow



KUVEMPU UNIVERSITY

DEPARTMENT OF ZOOLOGY

DVS COLLEGE OF ARTS AND SCIENCE SHIVAMOGGA

CERTIFICATE

This is to certify that assignment entitled

Vocal Responses And Communication In Aves.....

submitted in partial fulfillment of the requirements for the Second semester BACHELOR OF SCIENCE (BSc.CBZ) in DEPARTMENT OF ZOOLOGY, D.V.S College of Arts and Science Shivamogga affiliated to KUVEMPU UNIVERSITY is a work done by

Mr / Ms Vinitha.L.....

Register No. S18035A3.....

during the period of study 2018-2019 in the Department of Zoology under the guidance and supervision of faculties of the department.

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March 2019

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 Date: 21/03/19

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Vocal Responses And Communication In Aves.

Introduction →

Studies of vocal behavior in birds have made central contributions to animal behaviors and the neuro sciences. A well-known body of research has built on the discovery that vocal production in birds, particularly song birds, is underpinned by an elaborate, hierarchical array of song nuclei distributed through-out the brain.

Elucidation of the song system has proceeded apace, powered by a host of methodological advances including *in vivo* single cell recording, *in vitro* recordings from brain slices, selective lesioning, and neuronal tracings. The specialized nature of the song system for vocal production is exemplified by two key observations.

The neural morphology of the song system varies seasonally, in a manner that corresponds to variation in vocal output, and in species in which males sing but females do not, song system nuclei are comparatively reduced in females. Studies of the avian vocal system continue to provide key insights into neural mechanisms of motor control.

This entry focuses on three additional, complementary lines of research in the avian vocal system that hold particular relevance for the neurosciences.

* The vocalization of some bird groups, including song birds, humming birds, and parrots, develop through imitative learning, in a manner that parallels speech acquisition in humans. Vocal learning in songbirds is now known to be mediated by a specialized neural pathway, the development of which depends on birds auditory experiences.

A developmental stress hypothesis suggests that learned song can provide a reliable indicator of a male's neural developmental history and that females may thus use vocal parameters to assess the quality of prospective mates.

Experimental studies with hand-reared birds illustrate a previously unrecognized axis of plasticity in sensorimotor development, in which birds faced with physical limits on vocal model reproduction can calibrate their targets of learning.

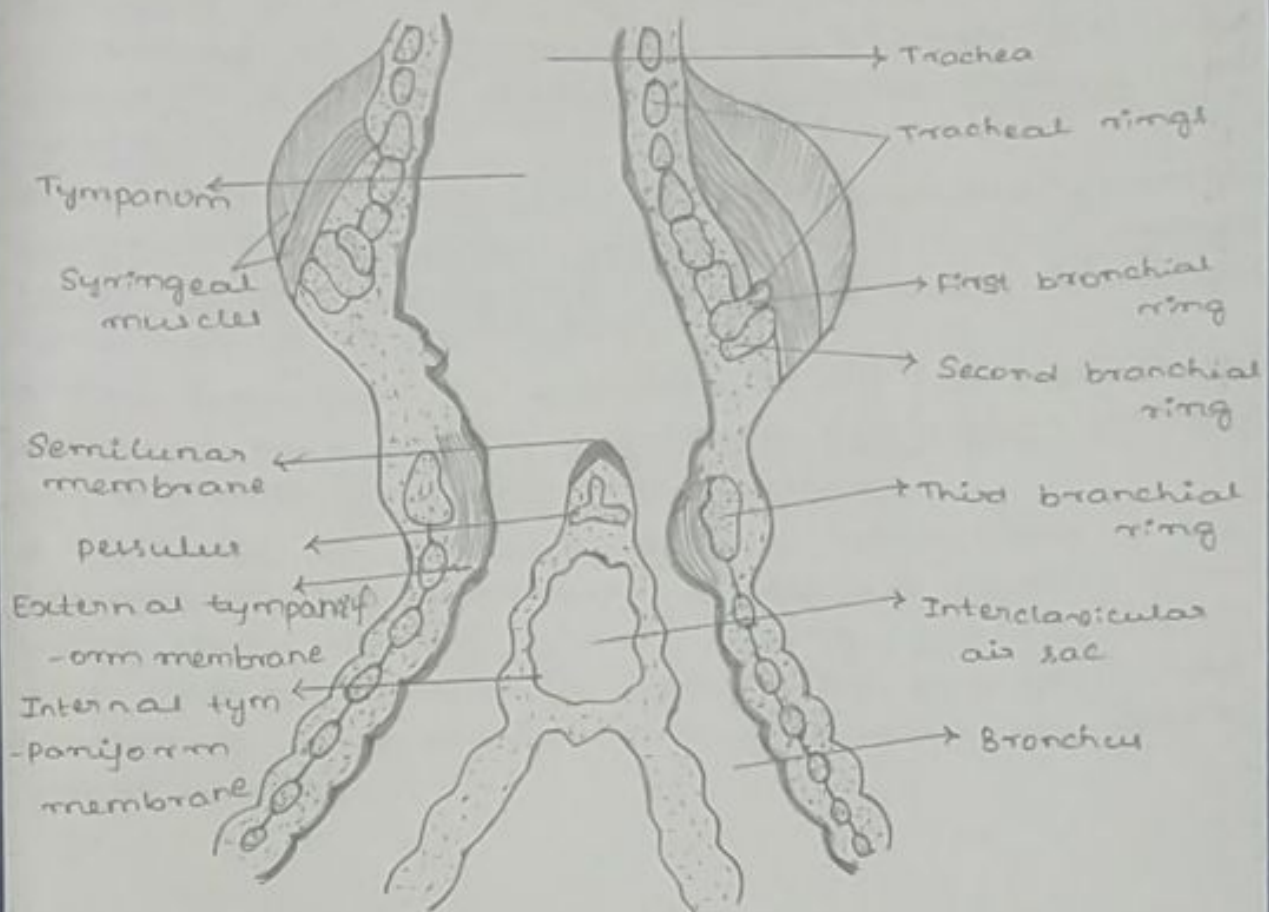
* vocal production entails extensive use of peripheral mechanisms. The vocal acoustic source, the syrinx is dynamically co-ordinated with activity of the respiratory and vocal tract motor systems. Rapid and precise modulations in breathing patterns are required for the production of intricate vocal timing patterns, and modulation of vocal tract configuration during phonation enables birds to adjust vocal tract resonances and thus the spectral properties of song.

It is not yet clear how birds manage to co-ordinate these multiple motor systems in vocal production, in terms of both neural control and its development. Limits on vocal performance, associated in particular with peripheral systems of vocal production, have been shown to constrain the production and evolution of certain vocal parameters.

* The biological function of bird song has been examined with vocal playback studies, which are providing new insights into birds' perceptual and recognition abilities. Field playback tests have been conducted primarily with territorial males, in which vocal stimuli are presented to simulate territorial intrusions.

Laboratory playback tests have been used to test birds' perceptual capabilities and limitations, and the preferences of females for different vocal stimulus classes. In conjunction with analyses of vocal variation, these studies are recognition. Interactive playback studies are helping researchers assess how birds modulate vocal output to convey varying levels of aggressive intent.

L.S OF SYRINX OF BIRD →



The 'Syrinx' is the vocal organ of birds. located at the base of a bird's trachea. It produces sounds without the vocal folds of mammals. Thus lateralization of bird song is possible and some song birds can produce more than one sound at a time.

* Syrinx is concerned with the sound production and is a characteristic of birds, but absent in Ostrich, storks and some vultures.

* It consists of an expanded chamber called tympanum.

* Its walls are supported by the last three or four rings of trachea and first half ring of each bronchus.

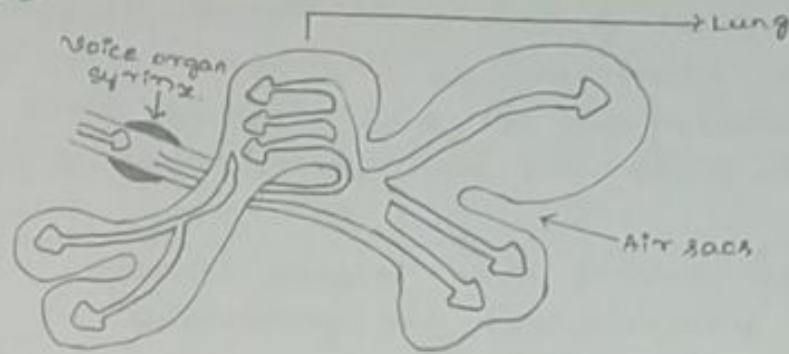
* peristyle is a bony ridge which extends dorso-ventrally at the junction of two bronchi and gives support to a small vibratory caescentic mucous membrane.

* The mucous membrane of each bronchus forms an external tympaniform membrane and an internal tympaniform membrane associated with the respective wall of the bronchus.

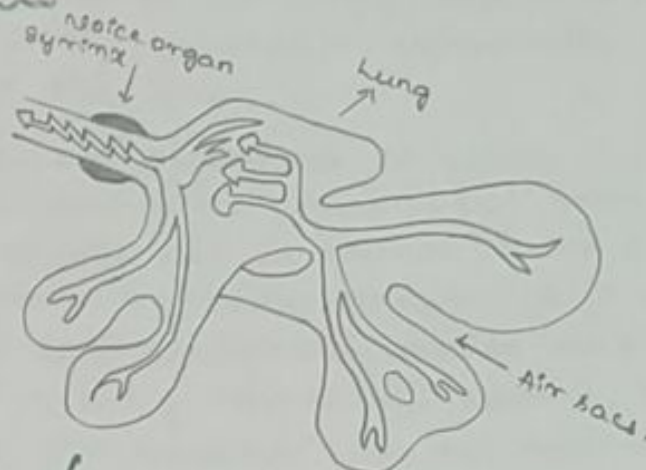
* These tympaniform membranes are controlled and regulated by a pair of intrinsic syringeal muscles and a pair of sternotracheal muscles.

* The voice is produced by the vibrations of the tympaniform membranes as the air expelled from lungs passes between them during expiration and pitch of the voice is altered by changes in the tension of these membranes controlled by above given muscles.

1. INHALATION



2. EXHALATION



Vocal Learning →

Some birds learn to sing using a diversity of learning strategies or programs. As with human speech development, vocal imitation in birds includes sensory and sensorimotor phases. During the sensory phase, birds memorize song models on which they are exposed.

The sensorimotor phase, defined by transitions of vocal output from babble like sub-song to crystallized adult forms, is mediated by comparison of vocal output to memorized song models by comparison via auditory feedback. During this phase, birds develop general proficiency with the vocal apparatus, as well as proficiency in the reproduction of memorized song models.

DVS COLLEGE OF ARTS AND SCIENCE

2020-21

★ Parental care in Amphibians

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INTRODUCTION

Parental care is extremely diverse across species, ranging from simple behaviours to complex adaptations, varying in duration and in which sex cares.

The egg attendance, arguably one of the simplest care behaviours, is gained and lost faster than any other care form, while complex adaptations like brooding and viviparity, are lost at very low rates. Prolonged care from the egg to later developmental stages evolves from temporally limited care, but it is as easily lost as it is gained. Finally, biparental care is evolutionarily unstable regardless of whether the parents perform complementary or similar care duties.

Parental care evolved to reduce the eggs or juveniles till they reach the reproductive age. This care is evolved to reduce the energy expenditure on reproduction, as in the absence of it animals must produce millions of eggs so that few could survive to replace the parents to ensure existence of the species. Terrestrial environment being much

harsher than the aquatic one, amphibians were the first vertebrates to have evolved different kind of parental care to protect their young ones.

Duration of parental care is highly variable between species. Prolonged care should entail higher costs to the parents in terms of energy, time and lost mating opportunities than temporally limited care. Early care at the egg stage in amphibians is believed to facilitate the evolution of care at later developmental stages by prolonging attendance and guarding behaviour beyond hatching.

Some forms of parental care such as egg or offspring attendance, are much more common than others and this may be due to differences in their phenotypic complexity.

PARENTAL CARE

Parental care is defined as any parental behaviour or adaptation that increases offspring fitness, often at some cost to the carer exhibits striking diversity among species, ranging from short term and relatively simple behaviours, such as egg attendance, to long term and elaborate adaptations, like some forms of food provisioning, viviparity and lactation. Not only does parental care affect the fitness of offspring and parents, but it has profound consequences for social evolution it leads to both cooperation and conflict within families, is associated with changes in species life history strategies, is related to mating system and sexual selection and is one of the main drivers for the evolution of sociality.

Some forms of parental care, such as egg or offspring attendance are much more common than others and this may be due to differences in their phenotypic complexity. Care at the egg stage in amphibians is believed to facilitate the evolution of care at later developmental

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stage by prolonging attendance and guarding behaviour beyond hatching.

Prolonged parental care through the acquisition of care at the later stages has not, been seen in most of the cases.

The extent of differences in care duration between species depends on the type of care performed and on which sex cares.

MODES OF PARENTAL CARE IN AMPHIBIA

There are six modes of parental care are recognised among the amphibia in different species they are:

1. Egg attendance
2. Egg Transport
3. Tadpole transport
4. Tadpole feeding
5. Tadpole attendance
6. Internal gestation in the oviduct
[viviparity and ovoviviparity]

TYPESTUDY
OF
AMPHIBIANS!



REQUIREMENT OF PARENTAL CARE

- ✓ Increase offspring survival during the stages in which parents and offspring are associated.
- ✓ Improve offspring quality in a way that leads to increased offspring survival.
- ✓ Parental care increases the reproduction in the future in offspring when parents are no longer associated with offspring.
- ✓ Helps in prevention of offsprings from the predators.
- ✓ Proper feeding for the offsprings.
- ✓ Nourishment for young ones.
- ✓ Extreme care until the nutritional independence.

DERMOPHISMEXICANUS

Dermophismexicanus is a central American Salamander, whose embryos are 2mm in diameter and feed on the egg yolk supply for only about three months of gestation before the yolk supply is exhausted. After that the mother produces a nutritious secretion from the lateral oviductal glands. Fetal caecilians move around within the oviduct and have specialized dentition with which they scrape the oviduct skin in order to stimulate and ingest the mother's nutritive secretion. The dentition is shed at birth and a different adult dentition is rapidly acquired within a few days. Foetuses also have elaborate tri-branched gills for respiration.



CRYPTOBRANCHUS

They are generally found living in depressions under stones in streams and rivers. Cryptobranchus lives in eastern North America, where mating occurs in late summer or early fall. Males prepare nests below large, submerged stones or logs. Females lay long, paired strings of several hundred eggs which are fertilized externally by the male. Males guard the eggs until they hatch in 2-3 months after egg-laying.



D.V.S College Of Arts & Science, Shimoga.

2021-22

From,

Dhanyachree Narayan.
II Semester.
B.sc, CBZ
52003380.

Subject:

Zoology

Topic:

Axolotl Larva.

To,

Department of
Zoology.
D.V.S college of
Arts and Science,
Shivamogga.

Contents:-

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Introduction :-

'Axolotl larva' of salamander of the family 'Ambystomatidae' (order caudata), notable for its permanent retention of larval features, such as 'external gills'. The species is found only in Lake 'Xochimilco', within Mexico city, where it is classified as a critically endangered species. The name axolotl is also applied to any full-grown larva of 'Ambystoma tigrinum' that has not yet lost its external gills.

A. mexicanum grows to about '25 cm (10 inches)' long and is 'dark brown' with 'black speckling'. Both 'albino' and 'white mutants', as well as other colour 'mutants', are common. The legs and feet are rather small, but tail is long. A fin extends from the back of the head to the tip of the tail. A lower fin extends from between the hind legs to the tip of the tail. The Axolotl is a 'paedomorphic' that is, it retains its larval traits throughout adulthood. Axolotls prey on variety of aquatic organisms including fish, mollusks, aquatic insects and other axolotls.

Although 'captive axolotls' may live as long as '15 years', 'axolotls' live for only about 'five or six years' in the wild.

AXOLOTL LARVA :-

SYSTEMATIC POSITION :-

Phylum	= Chordata.
Class	= Craniata.
Sub-phylum	= Vertebrata.
Division	= Gnathostomata.
Super class	= Tetrapoda.
Class	= Amphibia.
Order	= Urodela.
Sub-order	= Ambystomoidea.
Genus	= <u>Ambystoma</u> .

Geographical Distribution :-

Found in the 'United States', 'North America' and also found in the 'valley of Mexico''s freshwater lakes of 'Xochimilco' and 'Chalco'.

Habit and Habitat :-

'Adults' are 'terrestrial' and 'larva' found in 'ponds, lakes, etc.'

They feed on worms, insects and small fishes, as they are carnivorous.

General Characters:

The Axolotl larva was previously considered adult form and called Siredon.

Later it is found that the Axolotl is the larva Ambystoma tigrinum i.e. Tiger Salamander.

It has three pairs of crimson coloured external gills and 4 pairs of open gill clefts. Head contains eyes, nostril and mouth.

Larva is perennial. Body measuring about 27 cm in length is divided into head, trunk, and tail.

Tail is present with caudal fin and forelimbs and hindlimbs both are present.

It becomes sexually mature and lays eggs.

Axolotl larva is captivity metamorphoses to adult. Metamorphosis can be induced by injecting thyroid extract into Axolotl larva.

Axolotls of six months are more easily induced to metamorphose.

Metamorphosis to adult becomes difficult as the larva grows older. The partly metamorphosed retorial animals can be again induced to go back to larva stage.

It exhibits facultative neoteny i.e., in the cold water, higher altitudes exhibit neoteny, while in water of plains, it metamorphose normally.

Recently it is considered under the threatened species by IUCN.

They were easy to breed when compared to other salamanders.

It is used as an model organism to study the neoteny by researchers and they are bred in large number in captivity.

Experiments have been made successfully by the researchers to break neoteny by supplementing with iodine to water they inhabit or by supplementing iodine to food or by injecting iodine.

Axolotl larvae of *Ambystoma* do not undergo the metamorphosis if there is abundance of nutrition and oxygen supply and they develop gonads like adults to breed sexually.

* The phenomenon of neoteny or paedogenesis is either due to the lack of iodine or heredity and environment. *A. mexicanum* is supposed to be genetically neotenic.

* Males are identified by their swollen cloaca lined with papillae, while females are noticeable for their wider bodies full of eggs. Axolotl have barely visible vestigial teeth which would have developed during metamorphosis.

* 3 pairs of external gills are used for respiration although buccal pumping and gulping air from the surface, may also be used in order to provide the oxygen to their lungs.

Identification:

This Axolotl larva has three pairs of legs.

Bilaterally symmetrical, triploblastic, coelomate animal.

Presence of dorsal, hollow, tubular nerve cord.

Presence of notochord only in some stages or whole life.

Presence of pharyngeal gill slit stigmata at least in some stage of life.

Presence of internal skeleton endoskeleton

* Notochord is replaced by vertebral column.

* Distinct cranium or brain case is present.

* Presence of well developed head.

* Presence of paired lateral appendages.

* A post anal tail is usually present.

* A closed circulatory system is present

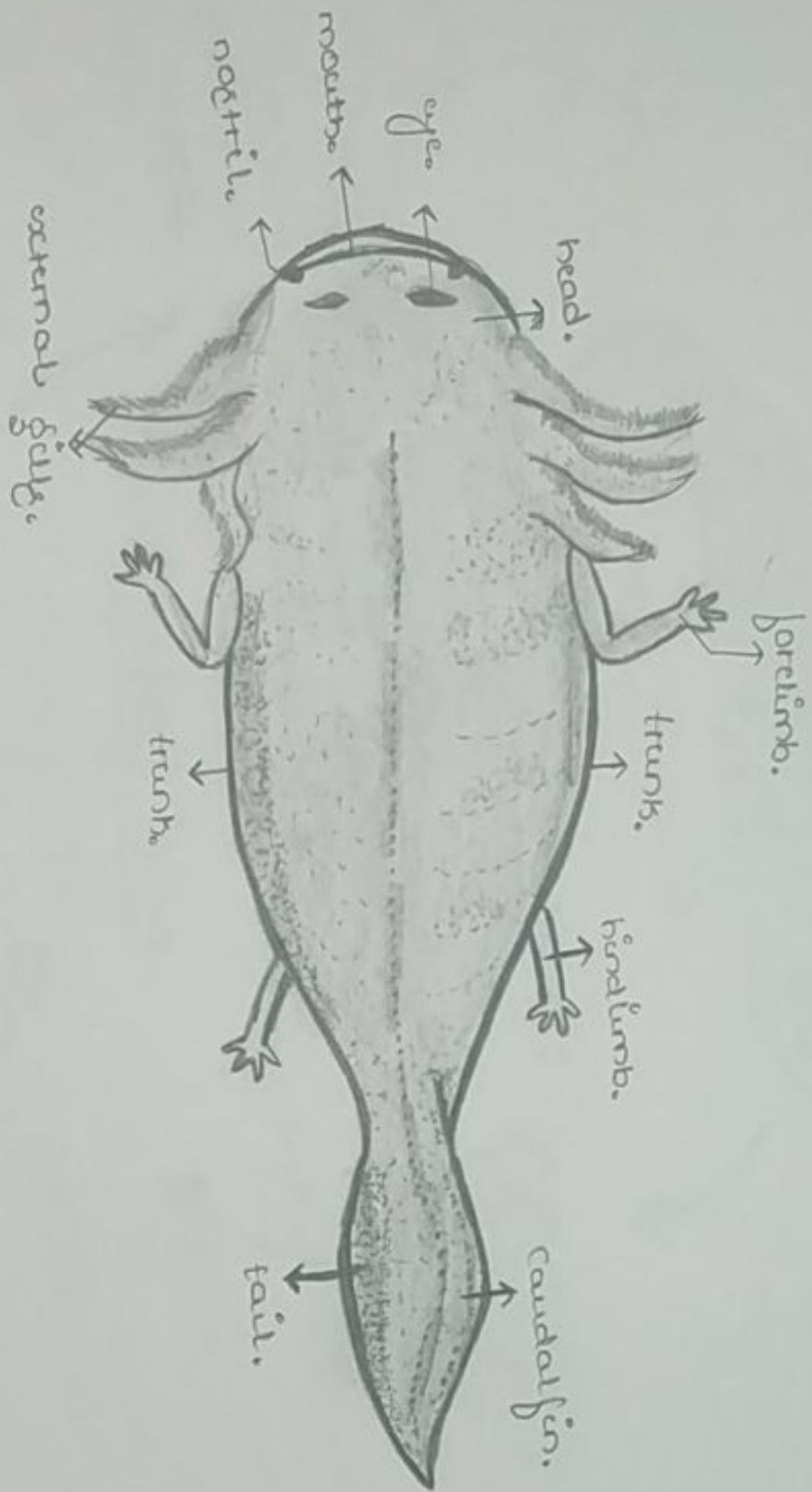
* Mouth is bounded by upper and lower jaws.

* Upper jaw immovable, lower jaw movable.

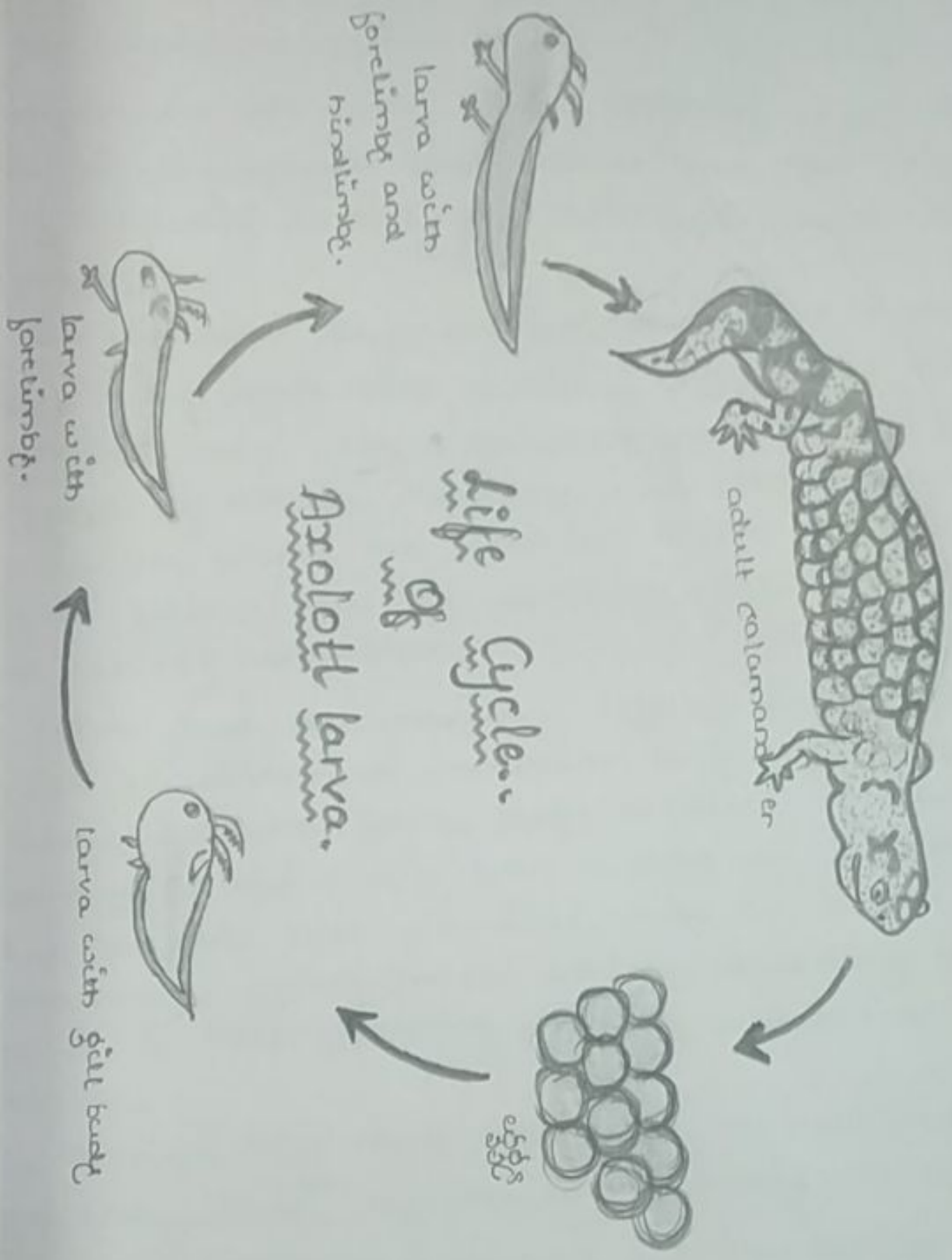
* Teeth may or may not be present on the jaws.

* Paired appendages present.

The above reasons also says that why these axolotl larva are classified under phylum - chordata, sub-phylum Vertebrata and super class Gnathostomata.



Axolotl Larva.



Importance Of Axolotl:

* The unique physiology and remarkable ability to regenerate severed limbs, it has become an important lab model for everything from tissue repair to development and cancer. But the centuries of inbreeding, captive populations are vulnerable to disease.

* The Axolotl plays an important role in the Mexico's life style and survival. Before they were endangered they were a valuable food source for the people of Mexico. Axolotls and other salamander around the world are becoming or are extinct due to factors such as pesticides, predators and habitat destruction.

* Wake says salamanders effects in ecosystems do not go unnoticed, however, in forests, salamanders accounts for a large amount of the biomass. Certain species even depend on salamanders for their own survival, such as the salamander eating snake, which, according to wake, is also showing signs of population decline.

* Because they have the ability to regenerate lost body parts, axolotls are probably one of the most scientifically studied salamanders in the world. Salamanders eat small insects, invertebrates and fish.