

ORGANIC CHEMISTRY

UNIT I

Introduction to organic chemistry: – The nature of organic compounds - Classes of organic compounds – Isomerism - Homologous series and Functional groups - Shapes of organic molecules – sp^3 , sp^2 , sp hybridization.

UNIT II

Aliphatic hydrocarbons: Classification and Nomenclature – chemical properties of alkanes, alkenes and alkynes. Aldehydes and Ketones: Nomenclature. Important aldehydes and ketones. Biological importance of aldehydes and ketones.

UNIT III

Alcohols and ethers: Classification and Nomenclature - Reactions of alcohols – Important alcohols - Commercial production of Ethanol - Di and tri hydric alcohols – Nomenclature of ethers - General methods of preparation - Reaction of ethers - Uses and hazards of ether - Thiols.

UNIT IV

Stereochemistry: Stereoisomerism: Polarised light and Optical activity – Geometrical isomerism – Conformational analysis – Tautomerism.

UNIT V

Natural products: Terpenes: Classification-isoprene rule-isolation, structural formulas of geraniol, menthol and terpenol. Alkaloids: General methods of isolation-structural formulas of cocaine, piperine, nicotine-applications. Vitamins: Classification – occurrence and biological importance of fat soluble and water soluble vitamins. Antibiotics: Chemotherapy – Structures of chloramphenicol, penicillin and streptomycin.

Reference books:

1. P.L.Soni & H.M.Chawla, *Textbook of Organic Chemistry*, Sultan Chand & Sons, 1994, Delhi.
2. K.S.Tewari, S.N.Mehrotra and N.K.Vishnoi, *A Text Book of Organic Chemistry*.
3. M.K.Jain, *Organic Chemistry*, Shoban Lal Nagin Chand and Co.,
4. Spice, J.E., *Chemical bonding and structure*, 1964.
5. Winter, M.J., *Chemical bonding*, 1996.
6. Ernest Eliel, *Stereochemistry of carbon compounds*, 1996.
7. Paula Yurkanis Bruice- *Organic Chemistry*, Prentice Hall
8. B.S. Bahl and Arun Bahl, *Advanced Organic Chemistry*, S. Chand and Co New Delhi.
9. Chatwall - *Organic chemistry of Natural Products*.