

## **PS 1203 PHARMACEUTICAL CHEMISTRY - III (Organic Chemistry)**

The subject of organic chemistry will be treated in its modern perspective keeping for the sake of convenience, the usual classification of organic compounds:

1. Structure and Properties: Atomic structure, Atomic orbitals, Molecular orbital theory, wave equation, Molecular orbitals, Bonding and Antibonding orbitals, Covalent bond, Hybrid orbitals, Intramolecular forces, Bond dissociation energy, Polarity of bonds, Polarity of molecules, structure and physical properties, Intermolecular forces, Acids and bases.
2. Stereochemistry: Isomerism and nomenclature and associated physicochemical properties, optical activity, stereoisomerism, specification of configuration, Reactions involving stereoisomers, chirality, chiral reagents conformations.
3. Structure, Nomenclature, Preparation and Reactions of: Alkanes, Alkenes, Alkynes, Cycloalkanes, Dienes, Benzene, Polynuclear aromatic compounds, Arenes, Alkyl halides, Alcohols, Ethers, Epoxides, Amines, Phenols, Aldehydes and ketones, Carboxylic acids, Functional derivatives of carboxylic acids, Reactive intermediates - carbocations, carbanions, carbenes, nitrene and nitrenium ions.

## **PS 1203P PHARMACEUTICAL CHEMISTRY - III (LAB)**

1. The student should be introduced to the various laboratory techniques through demonstrations involving synthesis of selected organic compounds (e.g. aspirin, -p-bromoacetanilide, anthraquinone from anthracene, reduction of nitrobenzene etc)
2. Identification of organic compounds and their derivatisation.
3. Introduction to the use of stereomodels.

### **Recommended books:**

1. Organic chemistry by Morrison and Boyd. (Prentice Hall of India, New Delhi)
2. Advanced organic chemistry by Bhal & Bhal (S.Chand, New Delhi)
3. Organic Chemistry Vol. 1 and II by I.L.Finar (Longman, Singapur)
4. Bently and Drivers text of Pharmaceutical chemistry by Oxford University, New Delhi