

B.Pharm. Semester-II (C.B.S.) Examination
PHARMACEUTICAL CHEMISTRY-II (ORGANIC)

Paper-2

Time : Three Hours]

[Maximum Marks : 80

N.B. :— (1) Question No. 1 is compulsory.

- (2) Solve any **FOUR** questions from remaining.
- (3) Draw neat labelled diagram wherever necessary.
- (4) Discuss the reaction, mechanism wherever necessary.
- (5) Use of electronic calculator is permitted.

1. Solve any **FIVE** of the following :

- (a) Write in brief about the Quantum structure of atom.
- (b) Differentiate between Organic and Inorganic compounds.
- (c) Define the term bond. Give the various types of bonds and write in brief about covalent bond.
- (d) Give the scope of organic chemistry with examples.
- (e) Give the classification of dienes along with examples.
- (f) Give the properties and uses of alkyl halides.
- (g) Define the term functional group and give the various types of organic reactions. 5×4=20

2. (a) Explain in detail about the combustion method of carbon and hydrogen estimation. 8
- (b) 0.2475 g of organic compound gives 0.4950 g of carbon dioxide and 0.2025 g of water. Calculate the percentage of carbon and hydrogen in it. 7

3. (a) Define the term isomerism and give its classification. Write in detail about R and S system of nomenclature with special emphasis on sequence rule. 8
- (b) Write in detail about the acidity of carboxylic acids and phenols. 7

4. (a) Define the term Empirical formula and molecular formula. Give the various rules for calculating the empirical formula.
 An organic compound has found to possess empirical formula CH_2O and molecular weight is 90. Find the molecular formula. 8

- (b) Write in detail about the structure of cyclohexane and the conformation of substituted cyclohexane. 7

5. Write notes on any **three** of the following :

- (a) Bayer strain theory
- (b) Lucas test for alcohol
- (c) Principle of sodium extract method
- (d) Hinsberg's test for amines. 5×3=15

6. (a) Why the melting point of inorganic compounds is more than that of organic compounds ? Explain with example.
- (b) Why alcohol is called as co-solvent ? Also explain about the solubility of water in methanol but not with carbon tetrachloride.
- (c) Why para hydroxy benzoic acid is less acidic than benzoic acid and salicylic acid is 15 times more acidic than benzoic acid ? 5×3=15

7. (a) Draw the structural formula and give IUPAC name of the following :

- (i) $\text{CH}_3\text{CH}_2\text{COCH}_2\text{CH}_2\text{COCH}(\text{CH}_3)_2$
- (ii) Cyclohexadiene
- (iii) trans $(\text{CH}_3)_2\text{CHCH}=\text{CHCH}(\text{CH}_3)_2$
- (iv) $(\text{CH}_3)_2\text{CHCH}_2\text{OCH}_2\text{CH}(\text{CH}_3)_2$ 8

- (b) Write in brief about the Newman projection formula and give detail account of conformation of ethane with energy profile diagram. 7