NKT/KS/17/6547

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) Discuss the reaction, mechanism wherever necessary.

(4) Use of electronic calculator is permitted.

1. Attempt the following (any **five**) :

(a) Give the different sources of organic compounds.

(b) Differentiate configuration and conformation.

(c) Comment on types of hybridization observed in water, ammonia and methane molecule.

(d) Give the definitions and examples of enantiomers and diastereomers.

(e) What are homolytic and heterolytic reactions ?

(f) Write in short about Lassaique's test.

(g) Both methane and carbon-tetrachloride are non-polar. Justify with reason.

(h) Define empirical and molecular formula. 4×5=20

2. Define stereochemistry and classify various stereoisomers with suitable examples with structures. Write in brief about Newman's and Sawhorse projections of some organic molecules. 15

3. (a) Give detailed account on Kjeldahl method. 7

(b) Combustion of 6.51 mg of a compound gave 20.47 mg of carbon dioxide and 8.36 mg of water. The molecular weight was found to be 84. Calculate the percentage composition, empirical formula and molecular formula of the compound. 8

4. Write short notes on (any **three**) :
   (a) Atomic and molecular orbital
   (b) Sequence rule
   (c) Substrate and reagent
   (d) Optical activity
   (e) Racemic resolution. 15

5. (a) Give the structural formula and 2 UPAC names for each of the following :
      (i) Isovaleric acid
      (ii) Isobutyl methyl ketone
      (iii) Phenyl acetic acid
      (iv) Picric acid
      (v) Trimethylacetaldehyde. 10
   (b) Write in short about Bayer's Strain theory. 5

6. Give the detailed account on types of organic reactions and factors affecting organic reactions. 15

7. Write short notes on (any **two**) :
   (a) Geometric Isomerism
   (b) Oxygen flask combustion method
   (c) Intra and Inter molecular forces. 15