NRJ/KW/17/4262

 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) $CH_3\ CH_2\ CO\ CH_2\ CH_2\ CO\ CH\ (CH_3)_2$
   (ii) Cyclohexadiene
   (iii) trans $(CH_3)_2CH\ CH{=}CH\ CH\ (CH_3)_2$
   (iv) $(CH_3)_2\ CH\ CH_2O\ CH_2\ CH\ (CH_3)_2$ 8
   (b) Write in brief about the Newman projection formula and give detail account of conformation of ethane with energy profile diagram. 7