NRJ/KW/17/4274

B.Pharm Fourth Semester (C.B.S.) Examination

PHARMACEUTICAL CHEMISTRY–IV

(Heterocyclic and Macromolecules)

Paper—2

Time : Three Hours] [Maximum Marks : 80

N.B. :— (1) Question No. **1** is compulsory.
(2) Solve any **four** questions from remaining.
(3) Assume suitable data wherever necessary.
(4) Discuss the reaction, mechanism wherever necessary.

1. Solve any **five** of the following :
   (a) Justify, "furan is aromatic, still can be easily opened by electrophilic reagents."
   (b) Differentiate oil, fats and waxes.
   (c) "Pyridine requires vigorous reaction conditions than pyrrole to undergo electrophilic aromatic substitution," Justify.
   (d) Write a note on epimerization.
   (e) What happens when glucose reacts with :
      (i) Hydroxylamine
      (ii) Phenylhydrazine
   (f) Who do nitration and halogenation reactions take place exclusively in the α - position in naphthalene ? Explain.
   (g) Describe structure of sucrose. 4×5=20
2. Classify polynuclear aromatic hydrocarbons with structure. Discuss the structure, nomenclature, synthesis and chemical reactions of naphthalene. 15
3. (a) What are lipids ? Classify them giving examples. Explain the various chemical constants used for the evaluation of oil. 10
   (b) Write a short note on lipoproteins. 5
4. Give the following synthesis with reaction mechanism :
   (a) Fischer-Indole synthesis
   (b) Skranp quinoline synthesis
   (c) Pall Knorr synthesis. 3×5=15
5. (a) What are carbohydrates ? Give classification with structural examples. Elucidate the cyclic structure of d-Glucose. 10
   (b) Discuss the structure of salicin. 5
6. (a) Define and classify proteins. Explain the secondary structure of protein in detail. 10
   (b) Write any two methods for synthesis of amino acids. 5
7. Write short notes on the following (any **three**) :
   (a) Chichibabin reaction
   (b) Configuration of aldoses
   (c) Properties of lipids and fats
   (d) Phenothiazine. 3×5=15