KNT/KW/16/6559

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

PHARMACEUTICAL CHEMISTRY—IV

(Heterocyclic and Macromolecules)

Paper—2

Time : Three Hours] [Full Marks : 80

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

(2) Solve any **FOUR** questions from the remaining.

(3) Write the reaction mechanism wherever necessary.

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

   (a) Draw and explain molecular orbital picture of Furan.

   (b) Pyridine is more basic than pyrrole but less basic than aliphatic amines. Justify.

   (c) Write the general method of polypeptide Synthesis.

   (d) Draw the structure of Salicin and Amygdalin.

   (e) Define Saponification value and Acid value along with its significance.

   (f) Draw the structure of :

      (i) Imidazole

      (ii) Oxazole

      (iii) Purine

      (iv) Phenothiazine. 4×5=20

2. Write the structure, nomenclature, synthesis and uses of any **THREE** of the following :

   (a) Quinoline

   (b) Indole

   (c) Isoquinoline

   (d) Pyrrole. 3×5=15

3. Define and classify carbohydrates giving suitable examples with structure. Discuss in detail Killiani-Fischer synthesis and Ruff's degradation method with reference to glucose. 15

4. (a) What are Proteins ? Give their classification. Explain in brief the secondary structure of protein. 8

   (b) Discuss N-terminal amino acid residue in detail. 7

5. (a) What are polynuclear aromatic compounds ? Classify them and give the specific nomenclature of naphthalene, anthracene and phenanthrene. 8

   (b) Give the synthesis and reaction mechanism of Haworth synthesis of Naphthalene. 7

6. (a) What are lipids ? Classify them with suitable examples. Write a note on drying of oil. 8

   (b) Discuss the various chemical constants used for the evaluation of fats or oils. 7

7. Write short notes on the following (any **THREE**) :

   (a) Mutarotation

   (b) Basicity of Pyridine

   (c) Classification of Amino acid

   (d) Phospholipids

   (e) Phenanthrene. 3×5=15