

B.Pharm. Semester-IV (C.B.S.) Examination
PHARMACEUTICAL CHEMISTRY-IV
(Heterocyclic and Macromolecules)
Paper—2 (4T2)

Time—Three Hours]

[Full Marks—80

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

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

(3) Draw neat labeled diagram wherever necessary.

(4) Discuss the reaction, mechanism wherever necessary.

(5) Assume suitable data wherever necessary.

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

(a) Define Saponification Value and Iodine Value with its significance.

(b) Write the biological importance of heterocycles in medicinal chemistry.

(c) Write the chemical properties of Pyrimidine.

- (d) Write a note on mutarotation phenomenon in Carbohydrates.
- (e) Pyridine is more basic than Pyrrole. Explain.
- (f) Differentiate between fats, oils and waxes.
- (g) Why Pyrrole undergoes electrophilic substitution reaction of C-2 position ? 4×5=20
2. (a) What are heterocyclic compounds ? Discuss in detail about chemistry, properties and synthesis of Pyridine. 8
- (b) Discuss the reaction and mechanism of Skroup's synthesis of Quinoline. 7
3. (a) Discuss the structure and synthesis of Naphthalene. 8
- (b) Write the chemical properties of Naphthalene. 7
4. (a) Define and classify carbohydrates giving suitable examples with structure. Add a note on cyclic structure of D-glucose. 8
- (b) Describe in detail about Killiani-Fischer synthesis and Ruff's degradation method. 7
5. (a) Define and classify Amino acids with suitable structure. Give any one method for amino and carbonyl end degradation of amino acid. 8
- (b) Discuss the secondary structure of proteins. 7

6. (a) Define and classify Lipids. Explain various pharmacopoeial standards to check purity of oil. 8
- (b) Write a note on Phospholipids. 7
7. Attempt the following (any **THREE**) :
- (a) Fischer–Indole Synthesis
- (b) Chemistry of Maltose
- (c) Bischler–Napierolski reaction of Isoquinoline
- (d) Chichibabin reaction
- (e) Structure of Amygdalin. 15