

[SV 707]

Sub. Code : 4172

SECOND B.Pharm. DEGREE EXAMINATION.

**Paper II — ADVANCED PHARMACEUTICAL
ORGANIC CHEMISTRY**

Time : Three hours Maximum : 90 marks

Two and a half hours Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions only.

1. Write a note on the following : (3 × 5 = 15)
 - (a) Restricted rotation about single bond in cyclohexane.
 - (b) Geometrical isomerism due to C = N.
 - (c) Resolution of racemic mixtures.
2.
 - (a) What are the necessary and sufficient requirements for a Diphenyl derivative to be optically active?
 - (b) Explain Waldens inversion and enumerate the factors influencing it.
 - (c) Write a note on geometrical isomerism of OXIMES and methods used for determining their configuration. (3 × 5 = 15)
3.
 - (a) Define and classify heterocyclic compounds with examples.
 - (b) Explain how furan is aromatic. Compare any two reactions undergone by furan with that of benzene.
 - (c) Describe the products obtained when quinoline and isoquinoline are oxidised by potassium permanganate. (3 + 8 + 4 = 15)

4. Give one method of preparation and any two reactions of
 (a) Quinoline (b) Furan (c) Naphthalene
 (d) Pyrrole (e) Thiophene. (5 × 3 = 15)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Indicate the preferred position of attack on pyridine by electrophilic reagents and give reasons.
6. What are polynuclear hydrocarbons? Give examples. Give the different forms in which phenanthrene can exist.
7. Give the hawarth synthesis of Naphthalene and give any two important reactions of Naphthalene with mechanism.
8. What happens when
 (a) Furfuryl alcohol is treated with methanolic HCl
 (b) Pyrrole is treated with boiling alkali and CHCl₃.
 (c) Sodium succinate is heated with phosphorus trisulfide.
 (d) Quinoline is treated with benzoylchloride in presence of Alkali.
 (e) Pyridine - 2, 3-dicarboxylic acid is heated strongly.
9. Compare the reactivity of Benzene, thiophene, furan and pyrrole towards electrophilic substitution.

10. Define the terms (a) Optical activity (b) Plane polarised light (c) Tautomers (d) Conformations (e) Racemic mixture.

11. Differentiate between the following :
 (a) Asymmetric and Disymmetric molecules.
 (b) Configuration and conformation.
 (c) Absolute and partial asymmetric synthesis.
 (d) Enantiomers and diastereoisomers.
12. Give the structure and use of the following :
 (a) Nikethamide (b) Chloroquine (c) Mepyramine (d) Sulphathiazole.
13. Give the name structure and use of compounds containing the following heterocycles :
 (a) Indols (b) Pyrrole (c) Imidazole (d) Pyrazole.