



PAPER ID-311511

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Subject Code: BP401T

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BPHARM
(SEM IV) THEORY EXAMINATION 2025-26
PHARMACEUTICAL ORGANIC CHEMISTRY III – THEORY

TIME: 3 HRS**M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief.

10 x 2 = 20

- a) Define optical purity.
- b) What are the conditions required for optical isomerism in an organic compound?
- c) Define specific rotation.
- d) What do you mean by enantiomerism?
- e) Write down the structure and medicinal uses of thiophene.
- f) Arrange furan, thiophene, and pyrrole in ascending order of aromaticity.
- g) Why is oxazole less reactive than imidazole?
- h) Differentiate between racemic mixture and meso compounds.
- i) Compare the basicity of pyridine with that of aliphatic amines.
- j) Write down the synthetic applications of birch reaction.

SECTION B

2. Attempt any *two* parts of the following:

2 x 10 = 20

- a) Define racemic modification and explain various methods for the resolution of racemic modification.
- b) Explain in detail the nomenclature in heterocyclic compounds.
- c) Discuss in detail the structure, synthesis, properties, and medicinal uses of indole.

SECTION C

3. Attempt any *five* parts of the following:

7 x 5 = 35

- a) Write a detailed note on the element of symmetry in an organic compound.
- b) Explain conformational isomerism in cyclohexane.
- c) Explain the following in detail.
 - i. Knorr pyrazole synthesis
 - ii. Robinson-Gabriel synthesis
- d) Discuss the structure and reactions of furan.
- e) Discuss in detail the Clemmensen reduction and its synthetic applications.
- f) Explain the following in detail.
 - i. Birch Reduction
 - ii. Hantzsch pyridine synthesis
- g) Write a detail about the oppenauer oxidation along with its synthetic applications.