Subject Code: BP401T

PAPER ID-311511

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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.

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