



Sessional II (Even) Semester Examination, May 2025

Roll no.....

Name of the Course and semester: B. Pharmacy (4th Semester)

Name of the Paper: Pharmaceutical Organic Chemistry-III

Paper Code: BP401T

Time: 1.5-hours

Maximum Marks: 30

Note:

- (i) This question paper contains three sections.
- (ii) All the questions are compulsory.

Section-A

Q1. Multiple Choice Questions – Attempt all questions (10 X 1 = 10 Marks)

a. Which of the following is a six-membered heterocyclic compound containing one nitrogen atom? CO3

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|------------------|---------------|
| (i). Pyridine | (ii). Furan |
| (iii). Thiophene | (iv). Oxirane |

b. Identify the saturated heterocyclic compound among the following: CO3

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|------------------|------------------|
| (i). Pyrrole | (ii). Piperidine |
| (iii). Quinoline | (iv). Pyridine |

c. Which of the following is a three-membered heterocycle with nitrogen? CO3

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|----------------|----------------|
| (i). Aziridine | (ii). Thiolane |
| (iii). Furan | (iv). Thiane |

d. What is the heteroatom present in thiolane? CO3

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|---------------|------------------|
| (i). Nitrogen | (ii). Oxygen |
| (iii). Sulfur | (iv). Phosphorus |

e. Which fused heterocyclic system contains nitrogen atoms in both rings? CO3

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|----------------|--------------------|
| (i). Quinoline | (ii). Isoquinoline |
| (iii). Purine | (iv). Coumarin |

f. Which of the following is a heterocycle with both nitrogen and oxygen as heteroatoms? CO4

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|--------------|-----------------|
| (i). Oxazole | (ii). Thiophene |
| (iii). Furan | (iv). Pyridine |

g. According to Hantzsch-Widman nomenclature, a saturated five-membered heterocycle with one sulfur atom is called: CO4

- (i). Thiolane (ii). Thiophene
(iii). Thiazole (iv). Thiane

h. Which of the following heterocycles is a five-membered ring containing both nitrogen and sulfur? CO4

- (i). Imidazole (ii). Thiazole
(iii). Oxazole (iv). Pyridine

i. The Bischler-Napieralski synthesis is used to prepare: CO4

- (i). Quinoline (ii). Isoquinoline
(iii). Imidazole (iv). Pyrimidine

j. Which of the following is NOT a fused heterocyclic compound? CO4

- (i). Indole (ii). Quinoline
(iii). Thiazole (iv). Purine

Section B

Q. 2 Short Questions: Attempt any two questions (2X 5 = 10 Marks)

a. Write a note on the nomenclature of heterocyclic compounds. CO3

b. Compare the relative aromaticity and reactivity of pyrrole, furan, and thiophene. CO3

c. Describe the basicity of pyridine with respect to pyrroles and aliphatic amines. CO4

Section C

Q. 3 Long questions: Attempt any one question (1X10 = 10 Marks)

a. Explain the resonance, preparation methods, chemical reactions, and uses of pyrrole. CO3

b. Describe the synthetic methods and chemical reactions for imidazole and quinoline. CO4