

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B. PHARM. SEMESTER- IV • EXAMINATION – WINTER -2023**

Subject Code: BP401TT

Date: 23/01/2024

Subject Name: PHARMACEUTICAL ORGANIC CHEMISTRY III

Time: 2:30 PM TO 5:30 PM

Total Marks: 80

**Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|------------|-----|---|-----------|
| <b>Q.1</b> | (a) | Give the Preparation, Properties and Chemical reaction of Pyrrole.  | <b>06</b> |
|            | (b) | Discuss the Sequence rule to assign configuration with example.   | <b>05</b> |
|            | (c) | Comment on the following<br>1. Pyridine is more basic than Pyrrole.<br>2. Pyridine is less basic than aliphatic amines  | <b>05</b> |
| <b>Q.2</b> | (a) | Write the Structure, Reaction, and Medicinal use of Imidazole, Oxazole.   | <b>06</b> |
|            | (b) | State and explain Racemic mixture and write note on different methods of resolution.  | <b>05</b> |
|            | (c) | Give brief note on reaction involve in $\text{LiAlH}_4$ and $\text{NaBH}_4$   | <b>05</b> |
| <b>Q.3</b> | (a) | Define following terms.<br>1) Enantiomers 2) Atropisomers 3) Conformational isomer 4) Diastereoisomer<br>5) Heterocyclic compound 6) Chirality  | <b>06</b> |
|            | (b) | Describe Conformational isomerism of Cyclohexane  | <b>05</b> |
|            | (c) | Explain Clemmensen reduction in detail  | <b>05</b> |
| <b>Q.4</b> | (a) | Give Brief note with mechanism on<br>a) Dakin Reaction b) Schmidt rearrangement   | <b>06</b> |
|            | (b) | Explain Hantzsch Synthesis in detail with structural  | <b>05</b> |
|            | (c) | Discuss basicity of pyridine  | <b>05</b> |
| <b>Q.5</b> | (a) | Explain any two synthesis and medicinal uses of Pyridine  | <b>06</b> |
|            | (b) | What are Stereospecific and Stereoselective reactions? Explain in detail  | <b>05</b> |
|            | (c) | Write in detail about Stereochemistry of Biphenyl compounds   | <b>05</b> |
| <b>Q.6</b> | (a) | Draw the structures of azepines and acridine and discuss any two reactions of them.   | <b>06</b> |
|            | (b) | Comment on following statements<br>i) Furan has high boiling point than Pyrrole.<br>ii) Furan is aromatic in nature although it containing two lone pair electron.<br>iii) Thiophene is more aromatic than pyrrole.<br>iv) Electrophilic substitution on pyridine favour at C3 position.<br>v) Pyrrole is more basic than aliphatic amine | <b>05</b> |
|            | (c) | Discuss nomenclature and classification of thiophene and furan  | <b>05</b> |
| <b>Q.7</b> | (a) | Give the structure of:<br>(1) Indole (2) Pyridine (3) Isoquinoline (4) Imidazole<br>(5) Acridine (6) Thiophene  | <b>06</b> |
|            | (b) | Define plane polarized light and discuss optical activity in detail   | <b>05</b> |
|            | (c) | Draw the structures of quinoline and isoquinoline and discuss any one synthesis of both.  | <b>05</b> |

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