

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- IV EXAMINATION – WINTER -2020

Subject Code: BP401TT**Date: 09/02/2021****Subject Name: PHARMACEUTICAL ORGANIC CHEMISTRY III****Time: 02:30PM TO 04:30PM****Total Marks: 54****Instructions:**

1. Attempt any THREE questions from Q-1 to Q-6.
2. Q.7 is compulsory to attempt.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) State and explain Racemic mixture and write note on different methods of resolution. **06**
- (b) Give the Preparation, Properties and Chemical reaction of Pyrrole. **05**
- (c) Give Difference between Enantiomers and Diastereomers. **05**
- Q.2** (a) Give brief note on Conformation of Cyclohexane. **06**
- (b) State and Explain **05**
- a) Enantiomers b) Diastereomers c) Specific rotation
- d) Mesomers e) Geometric Isomer
- (c) Write short note on preparation and chemical properties of Thiazole. **05**
- Q.3** (a) Give Brief note with mechanism on **06**
- a) Dakin Reaction b) Schmidt rearrangement
- (b) Comment on following statements **05**
- i) Furan has high boiling point than Pyrrole.
- ii) Furan is aromatic in nature although it contains two lone pair electrons.
- iii) Thiophene is more aromatic than pyrrole.
- iv) Electrophilic substitution on pyridine favours at C₃ position.
- v) Pyrrole is more basic than pyridine and aliphatic amine.
- (c) Write a Short Note on Geometric Isomerism. **05**
- Q.4** (a) Write the Structure, Reaction, and Medicinal use of Imidazole, Oxazole. **06**
- (b) Give any three preparations of i) Indole ii) Quinoline **05**
- (c) Give Structure of following ring systems **05**
- i) Pyrimidine ii) Isoquinoline iii) Purine iv) Acridine v) Thiazole
- Q.5** (a) Give Brief note with Mechanism on **06**
- a) Clemmensen Reduction b) Beckmann rearrangement
- (b) Complete the reaction **05**
- The reactions are represented by skeletal structures: 1. Pyrrole (a five-membered ring with one nitrogen and two double bonds) with reagents H₂SO₄/HNO₃. 2. Imidazole (a five-membered ring with two nitrogens and two double bonds) with reagent H₂SO₄. 3. Thiazole (a five-membered ring with one nitrogen, one sulfur, and two double bonds) with reagent NaNH₂. 4. Indole (a benzene ring fused to a pyrrole ring) with reagent I₂.
- (c) Explain Hantzsch Synthesis in detail with structural mechanism **05**

- Q. 6** (a) State and Explain and give brief note on Atropisomers with suitable examples. **06**
(b) Write short note on preparation and chemical properties of Pyridine. **05**
- (c) State and explain with structural mechanism - Electrophilic substitution reaction favour C₂ position in Furan. **05**
- Q.7** (a) Give brief note on Claisen-Schmidt Condensation and Wolff Kishner Reduction. **06**
- OR**
- (a) Explain in brief with suitable example - Stereospecific and Stereoselective reactions. **06**
- OR**
- (a) Give brief note on reaction involve in LiAlH₄ and NaBH₄. **06**
