

**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 containing two lone pair electron.
- iii) Thiophene is more aromatic than pyrrole.
- iv) Electrophilic substitution on pyridine favour at C<sub>3</sub> 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 preparation of i) Indole                      ii) Quinoline **05**
- (c) Give Structure of following ring system **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) Beckmanns rearrangement
- (b) Complete the reaction **05**
- The reactions are:

  1. C1=CN=C1  $\xrightarrow{\text{H}_2\text{SO}_4/\text{HNO}_3}$  \_\_\_\_\_
  2. C1=CN2C=NC2=C1  $\xrightarrow{\text{H}_2\text{SO}_4}$  \_\_\_\_\_
  3. C1=CN2C=NC2=C1  $\xrightarrow{\text{NaNH}_2}$  \_\_\_\_\_
  4. C1=CC=C2C(=C1)C=CN2  $\xrightarrow{\text{I}_2}$  \_\_\_\_\_
- (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 C<sub>2</sub> 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 LiAlH<sub>4</sub> and NaBH<sub>4</sub>. **06**

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