

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – WINTER • 2016

Subject Code: 240003

Date: 24-10-2016

Subject Name: Pharmaceutical Chemistry - IV

Time: 10:30 am - 01:30 pm

Total Marks: 80

Instructions:

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

- Q.1** (a) Define conformational isomers. What are the different possible conformations of 1,2- dibromoethane? Which one is more stable? Why? **06**
- (b) Explain the sequences rule to assign R and S configuration. Draw the possible stereoisomer of 2,3-dichlorohexane. **05**
- (c) Explain stereoselective and stereospecific reaction. **05**
- Q.2** (a) Define racemic mixture. Give different method of resolution of racemic mixture. **06**
- (b) What is polynuclear aromatic compound? Give the chemistry of Naphthalene. **05**
- (c) What are Grignard reagents? Discuss its utility in organic chemistry with specific example. **05**
- Q.3** (a) How phenols differ from alcohols? Explain the preparation of Phenol in detail. **06**
- (b) Explain the role of reagents. **05**
- a) FeCl₃ in halogenations of benzene
- b) H₂SO₄ in nitration of benzene
- (c) Give the structures of Quinol, Pyragallol, o-Xylene, Resorcinol and Phenanthrene. **05**
- Q.4** (a) Give conversion of following: **06**
- a) Aspirin from Phenol
- b) Salicylaldehyde from phenol
- (b) Give two methods for preparation of the functional derivatives of carboxylic acid. **05**
- (c) Comment on each of the following statements: **05**
- (i) Methyl amine is stronger base than ammonia.
- (ii) Phenol is weak acid.
- (iii) Benzene is not cyclohexatriene.
- Q.5** (a) Write a note on Sandmeyer reaction and Hofmann degradation of Amide. **06**
- (b) What are carbonyl compounds? Explain nucleophilic addition reaction of carbonyl compounds. **05**
- (c) Explain Cannizaro reaction and Aldol condensation reaction with mechanism. **05**

- Q. 6** (a) What are amines? How are they classified? Discuss any three general method of preparation and three reactions of amines. **06**
- (b) Explain the basicity of amines. **05**
- (c) Discuss various preparation of carboxylic acid. How diethyl malonate is useful in the synthesis of various carboxylic acids? **05**
- Q.7** (a) How microwaves are useful in organic synthesis? Give its applications and limitations with suitable examples. **06**
- (b) What is conjugated system? Explain the Michael addition reaction. **05**
- (c) What do you understand regarding the Nanochemistry? How this technique is involved in organic synthesis? **05**
