

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.**

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|------------|-----|---|-----------|
| 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.
a) FeCl ₃ in halogenations of benzene
b) H ₂ SO ₄ in nitration of benzene | 05 |
| | (c) | Give the structures of Quinol, Pyragallol, o-Xylene, Resorcinol and Phenanthrene. | 05 |
| Q.4 | (a) | Give conversion of following:
a) Aspirin from Phenol
b) Salicylaldehyde from phenol | 06 |
| | (b) | Give two methods for preparation of the functional derivatives of carboxylic acid. | 05 |
| | (c) | Comment on each of the following statements:
(i) Methyl amine is stronger base than ammonia.
(ii) Phenol is weak acid.
(iii) Benzene is not cyclohexatriene. | 05 |
| 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**
