

GUJARAT TECHNOLOGICAL UNIVERSITY**B.Pharm – SEMESTER – IV - EXAMINATION – SUMMER- 2016****Subject Code: 240003****Date: 01/06/2016****Subject Name: Pharmaceutical Chemistry –IV****Time: 10:30 AM to 1:30 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 conformation. Discuss the stability and potential energy changes of all conformation for n-Butane. | 06 |
| | (b) | Write a note on stereochemistry of Biphenyls and Allens. | 05 |
| | (c) | Explain stereoselective and stereospecific reaction. | 05 |
| Q.2 | (a) | What is racemic mixture? Give importance of resolution of racemic mixture? What are the methods used to resolve it? | 06 |
| | (b) | What do you understand by Grignard reagents? Discuss its utility in organic chemistry with specific example. | 05 |
| | (c) | What is polynuclear aromatic compound? Give the chemistry of Anthracene. | 05 |
| Q.3 | (a) | Write a note on Friedel craft alkylation and Friedel craft acylation with mechanism. Discuss the limitation of it. | 06 |
| | (b) | What are phenols? Explain the preparation of Phenol in detail. | 05 |
| | (c) | Give the structures of Picric acid, Catechol, Phloroglucinol, o-Xylene and Picric acid | 05 |
| Q.4 | (a) | Explain Riemer Tiemann reaction and Kolbe reaction with mechanism. | 06 |
| | (b) | Which are the functional derivatives of carboxylic acid? Give two methods for preparation of each. What are the applications of these products? | 05 |
| | (c) | Comment on each of the following statements: | 05 |
| | | (i) Chloroacetic acid is stronger than acetic acid. | |
| | | (ii) Benzene is not cyclohexatriene. | |
| | | (iii) m-Nitrobenzoic acid is more acidic than p-Nitrobenzoic acid. | |
| Q.5 | (a) | Give conversion of following: | 06 |
| | | (i) p-Nitro Aniline from Aniline | |
| | | (ii) m-nitro benzoic acid from Toluene | |
| | | (iii) Phenol from Aniline | |
| | (b) | Write various reactions involved in oxidation and reduction of Aldehydes and Ketones. | 05 |
| | (c) | Explain Cannizzaro reaction and Aldol condensation reaction with mechanism. | 05 |
| Q.6 | (a) | Comment on each of the following statements: | 06 |
| | | (i) p-Toludine is strong base than aniline. | |
| | | (ii) Staggered conformation is more stable than eclipsed. | |
| | | (iii) Phenol is weak acid. | |
| | (b) | Write a note on following reactions Hofmann degradation of Amide. | 05 |
| | (c) | Explain the basicity of amines. | 05 |
| Q.7 | (a) | Define Nucleophilic aromatic substitution reaction. Explain the generation and mechanism of Benzyne in detail. | 06 |
| | (b) | What is green chemistry? What are the approaches to achieve it? Discuss it with suitable examples. | 05 |
| | (c) | Write notes on Diels-Alder reaction with reference to conservation of orbital symmetry rules. | 05 |
