

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.

- 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 Riemeier 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**
