

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. Pharm. SEMESTER – IV (OLD Syllabus) • EXAMINATION – SUMMER • 2015****Subject Code: 240003****Date: 03-06-2015****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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|-------------|--|-----------|
| <b>Q.1</b>  | (a) Give mechanism for Nucleophilic aromatic substitution reaction   | <b>06</b> |
|             | (b) Give method of preparation of carboxylic acid  | <b>05</b> |
|             | (c) Write a note on Reimer Tiemann and Kolbe reaction  | <b>05</b> |
| <b>Q.2</b>  | (a) Give the mechanism of Nitration and Chlorination of benzene  | <b>06</b> |
|             | (b) Write a note on Hofmann's degradation of amines  | <b>05</b> |
|             | (c) How is Phenol prepared? Give four method of preparation  | <b>05</b> |
| <b>Q.3</b>  | (a) Explain Enantiomers and Diastereomers. Enlist different methods for racemic resolution and explain any one | <b>06</b> |
|             | (b) What is Huckel rule? Write examples of two compounds that follow this rule.                                | <b>05</b> |
|             | (c) What are advantage of Microwave synthesis over conventional synthesis?                                     | <b>05</b> |
| <b>Q.4</b>  | (a) How are ketones prepared?  | <b>06</b> |
|             | (b) Write a note on stereochemistry of Biphenyls.  | <b>05</b> |
|             | (c) Write a note on Aldol Condensation and Cannizzaro reaction   | <b>05</b> |
| <b>Q.5</b>  | (a) Comment on the following   | <b>06</b> |
|             | i) Aromatic ring containing the amino functional group does not undergo friedel craft alkylation               |           |
|             | ii) Acetone are less reactive than acetaldehyde  |           |
|             | iii) Staggered confirmation is more stable than eclipsed   |           |
|             | (b) Explain sequence rule to assign conformation   | <b>05</b> |
|             | (c) Write a note on Diels Alder reaction.  | <b>05</b> |
| <b>Q. 6</b> | (a) Comment on the following   | <b>06</b> |
|             | i) Phenol is more acidic than alcohol  |           |
|             | ii) Meso compounds are optically active  |           |
|             | iii) P-nitrophenol is more volatile than o-nitroaniline  |           |
|             | (b) Explain conformation of cyclohexane  | <b>05</b> |
|             | (c) Give structural formula for  | <b>05</b> |
|             | i) Catechol                      (ii) Resorcinol   |           |
|             | iii) Benzaldehyde      (iv) Phthalic acid      (v) Diphenylamine   |           |
| <b>Q.7</b>  | (a) Write a note on fridel craft alkylation. Discuss with its limitation                                       | <b>06</b> |
|             | (b) Give preparation and synthetic utility of a Diazonium salt   | <b>05</b> |
|             | (c) Define the following:  | <b>05</b> |
|             | i)Dextrorotatory    (ii) Chiral centre (iii) Meso compound   |           |
|             | (iv) Optical activity    (v) Configuration   |           |