

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – SUMMER 2013

Subject Code: 240003

Date: 16-05-2013

Subject Name: Pharmaceutical Chemistry - IV

Time: 10.30 pm - 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) Why Green chemistry is a need of present time? Explain with suitable examples. **06**
 - (b) Give the application of Nanochemistry and Microwave synthesis. **05**
 - (c) Explain Huckel rule in detail. **05**
- Q.2**
- (a) Discuss the Sequence rule in detail. **06**
 - (b) Explain the following reactions: **05**
 - (i) Michael addition
 - (ii) Diels – Alder reaction
 - (c) Define the following terms: **05**
 - (i) Specific rotation
 - (ii) Racemic modification
 - (iii) Meso compound
 - (iv) Enantiomer
 - (v) Chiral center
- Q.3**
- (a) Define Stereoselective and Stereospecific reactions. Explain in detail with suitable examples. **06**
 - (b) Discuss the orientation in Nucleophilic aromatic substitution reaction with suitable example. **05**
 - (c) Give the structure of following compound: **05**
 - (i) 3-Bromo-4-aminotoluene
 - (ii) *p*-Acetamidobenzenesulfonyl chloride
 - (iii) *p*-Nitroso-*N,N*-dimethylaniline
 - (iv) *p*-Methylanisole
 - (v) Methyl *n*-butyl ketone
- Q.4**
- (a) Explain the Stereochemistry of Biphenyls and Allenes with suitable examples. **06**
 - (b) What are the different conformations of Cyclohexane? Which one is more stable? Why? **05**
 - (c) What is Diazonium salt? Give their preparation and reactions. **05**
- Q.5**
- (a) Explain the following reaction: **06**
 - (i) Reimer - Tiemann reaction
 - (ii) Fries rearrangement
 - (b) What are Arenes? Give any two structures and two reactions of it. **05**
 - (c) Explain the mechanism of Nucleophilic addition reaction of ketones. **05**

- Q. 6** (a) Explain any two methods for the preparation of Carboxylic acids. Give the reactions involved in the conversion of Carboxylic acids to Acid chlorides. **06**
- (b) Give the method of preparation of Esters. Explain the reaction of Esters with Grignard reagent. **05**
- (c) Give the reaction and mechanism of Hoffmann rearrangement. **05**
- Q. 7** Explain the following reaction:
- (a) Friedal – Crafts alkylation **04**
- (b) Cannizzaro reaction **04**
- (c) Sigmatropic reaction **04**
- (d) Electrocyclic reaction **04**
