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: (i) Michael addition (ii) Diels – Alder reaction	**05**
	(c)	Define the following terms: (i) Specific rotation (ii) Racemic modification (iii) Meso compound (iv) Enantiomer (v) Chiral center	**05**
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: (i) 3-Bromo-4-aminotoluene (ii) *p*-Acetamidobenzenesulfonyl chloride (iii) *p*-Nitroso-*N,N*-dimethylaniline (iv) *p*-Methylanisole (v) Methyl *n*-butyl ketone	**05**
Q.4	**(a)**	Explain the Stereochemistry of Biphenyls and Allenes with suitable examples.	**06**
	(b)	What are the different conformations of Cylcohexane? 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: (i) Reimer - Tiemann reaction (ii) Fries rearrangement	**06**
	(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**

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