Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – III • EXAMINATION – WINTER 2013

Subject Code: 2230004 **Date: 21-12-2013**

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.**

Q.1	**(a)**	Comments on following statements. 1. 1, 3-butadiene is more stable than 1, 2-butadiene. 2. Aromatic compounds undergo electrophilic substitutions only. 3. Acetylene is more acidic than ethane. 4. Epoxides are more reactive than ether. 5. Nitro group, when attached to benzene, activates the ring.	**10**
	(b)	How will you distinguish between primary, secondary and tertiary alcohol.	**06**
Q.2	**(a)**	Give structural formula of the following compounds. 1. Diallylether 2. Cis-4-methyl-2-pentene 3. Vinyl chloride 4. Isobutene 5. 2-methoxy pentane 6. 1,6-hexadiene	**06**
	(b)	Differentiate: SN1 and SN2 reactions.	**05**
	(c)	What are epoxides? Explain anti hydroxylation by the cleavage of epoxides.	**05**
Q.3	**(a)**	Write a note on following. 1. intramolecular and intermolecular forces. 2. Williamson's synthesis of ether.	**06**
	(b)	Discuss the Haworth synthesis for Naphthalene.	**05**
	(c)	Explain the term aromaticity? What is meant by electrophilic substitution reaction? Illustrate your answer with reference to reactions of benzene.	**05**
Q.4	**(a)**	Comments on following statements. 1. Pi bond is weaker than sigma bond. 2. Bromination of alkane is more selective than chlorination. 3. Alkene undergoes Electrophilic addition reactions. 4. Pyridine is aromatic. 5. Reactions of alcohols are acid catalysed.	**10**
	(b)	Define hybridization. Explain hybrid orbitals with examples.	**06**
Q.5	**(a)**	Enlist five Reactive intermediates. Write a note on carbocation and free radical.	**06**
	(b)	Differentiate: E2 and E1 mechanism of elimination.	**05**
	(c)	Explain Dumas method for estimation of nitrogen.	**05**
Q. 6	**(a)**	Explain different types of bond giving examples.	**06**
	(b)	State and explain: saytzeff's rule, antimarcovnikov addition.	**05**
	(c)	Write the mechanism and limitations of Friedel-Crafts alkylation of benzene.	**05**
Q.7	**(a)**	Give two methods for synthesis of alkynes and alkyl halides.	**06**
	(b)	Explain bonding and antibonding orbitals.	**05**
	(c)	Explain Hydroboration – oxidation reaction of alkene with detailed mechanism.	**05**

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