Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – I • EXAMINATION – SUMMER 2013

Subject Code: 910101 **Date: 15-05-2013**

Subject Name: Advanced Organic Chemistry - I

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)	What is hyperconjugation? Discuss about different types of hyperconjugation with suitable examples. What are its implication on stability and reactivity of organic molecule?	**06**
	(b)	How carbene is generated? Discuss about its nature with suitable example.	**05**
	(c)	What are lewis acids? Discuss about their importance organic synthesis.	**05**
Q.2	(a)	Write with suitable example about influence of stearic, inductive and electrostatic effect of substituent on reactivity of organic molecule.	**06**
	(b)	Write a note on Molecular Orbital Theory. Discuss in brief about bonding and antibonding orbitals.	**05**
	(c)	How polarity influence the physical and chemical properties of organic molecule? Discuss with suitable example.	**05**
Q.3	(a)	What will be the product form when different structural isomer of butyl bromide reacted with solution of varied concentration of sodium hydroxide? Discuss in detail about their reaction mechanism with factors affecting on reactivity.	**10**
	(b)	Write a note on aromatic nucleophilic substitution reaction.	**06**
Q.4	(a)	Which types of compound prefer to undergo nucleophilic addition reaction ? Discuss with suitable example and mechanism.	**06**
	(b)	What is antimarkonikov product ? Discuss in detail with suitable example and mechanism.	**05**
	(c)	Describe saytzeffôs and Hoffman rule with example.	**05**
Q.5	(a)	Write in detail about rearrangement occur in carbocation and free radical intermediate. Discuss with suitable example.	**06**
	(b)	Write a note on tautomerism.	**05**
	(c)	Write in detail about Pinacol and Hoffman rearrangement.	**05**
Q. 6	(a)	What are the different ways in which esters get dissociated ? Discuss about each in detail with suitable example. Write a note on claisen condensation.	**10**
	(b)	How nucleophilic carbon is generated ? What are the structural requirements for its generation. Discuss with suitable example.	**06**
Q.7	(a)	Different types of alkylhalide undergo dehydrohalogenation by different mechanism. Discuss each mechanism in detail.	**06**
	(b)	Write a note on E1cb mechanism with suitable example.	**05**
	(c)	Write in detail about influence of neighbouring group on nucleophilic substitution.	**05**

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