Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Pharm. – SEMESTER III– • EXAMINATION – SUMMER 2017

Subject Code: 2230004 Date: 07/06/2017

Subject Name: Pharmaceutical Chemistry-IV (Organic Chemistry-I)

Time: 02:30 PM - 5:30 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)**	Explain the following terms giving suitable examples: i) Electromeric effect ii) Hybridization iii) Hyperconjugation iv) Electrophile v) Tautomerism vi) Free radical	**06**
	(b)	Explain relative stability of primary, secondary and tertiary carbocation.	**05**
	(c)	Explain how Bonding Molecular Orbital (BMO) and Anti-bonding Molecular Orbitals (ABMO) are formed?	**05**
Q.2	**(a)**	Give three different methods of preparation for alkanes.	**06**
	(b)	What is Saytzeff rule? Give an example.	**05**
	(c)	Explain resonance. Write the necessary conditions for resonance.	**05**
Q.3	**(a)**	Give structural formula of following compounds: i) Neohexane ii) Allyl alcohol iii) Phenylacetylene iv) Anthracene v) 1,3-Butadiene vi) 1-Butyne	**06**
	(b)	Write a short note on Oxymercuration-Demercuration of alkene.	**05**
	(c)	Write a note on Markonikov's rule.	**05**
Q.4	**(a)**	Write a note on the following: i) Lucas test ii) Williamson synthesis of ethers	**06**
	(b)	How are alkynes prepared? Discuss important properties of alkynes.	**05**
	(c)	What is Huckel's rule? Write the structure of three compounds that follow this rule.	**05**
Q.5	**(a)**	Discuss the mechanism and stereochemistry of S_N1 and S_N2 reactions.	**06**
	(b)	Give scheme for Haworth's synthesis of naphthalene with benzene as starting material.	**05**
	(c)	Write a note on peroxide effect.	**05**
Q. 6	**(a)**	Give the mechanism of Friedel-Crafts alkylation and acylation of benzene.	**06**
	(b)	Give general methods for preparation of alkene.	**05**
	(c)	Explain in detail any two reactions of anthracene.	**05**
Q.7	**(a)**	What are carbenes? Give some examples. Discuss the structure of carbenes.	**06**
	(b)	Explain in detail Liebig's method for quantitative estimation of carbon and hydrogen of an organic compound.	**05**
	(c)	Explain the terms solvolysis and anchimeric assistance.	**05**

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