Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – SUMMER • 2014

Subject Code: 132805 **Date: 06-06-2014**

Subject Name: Organic Chemistry

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Fill in the blanks:	**07**
	1.	The characteristic of carbon of forming four covalent bonds is called _____.	
	2.	Free radicals are produced due to _____ bond fission.	
	3.	_____ synthesis is the method of preparation of ethers from alkyl halides and metal alkoxides.	
	4.	The reaction between carboxylic acid and alcohol in presence of acid produces _____.	
	5.	According to _____ Rule a system having aromatic character will have (4n+2) π electrons.	
	6.	_____ is the necessary condition for a molecule to exhibit optical isomerism.	
	7.	The isomers possess the same _____ formula but different structural formula.	
	(b)	Define the following terms:	**07**
		(1) Carbonium ion (2) Bonding orbitals	
		(3) Bond length (4) Electro negativity	
		(5) Optical isomers (6) Specific rotation (7) Asymmetric carbon	
Q.2	**(a)**	Give an account of the mode of formation of carbonium ions and carbanions.	**07**
	(b)	Explain substitution, addition, elimination and rearrangement reactions by giving one example of each.	**07**
		OR	
	(b)	1. Explain polarity in covalent bonds.	**04**
		2. Differentiate between electromeric effect and inductive effect.	**03**
Q.3	**(a)**	Describe general methods of preparation and properties of alkyl halides.	**07**
	(b)	Write reactions of –OH group of Phenol.	**07**
		OR	
Q.3	**(a)**	Describe different methods of preparation of monocarboxylic acids.	**07**
	(b)	Write reactions of $-NH_2$ group of Aniline.	**07**
Q.4	**(a)**	Write preparation, properties and uses of Naphthalene.	**07**
	(b)	Describe different methods and properties of Furan.	**07**
		OR	
	(a)	Write preparation, properties and uses of Anthracene.	**07**
	(b)	Describe methods of preparation of Pyridine.	**07**
Q.5	**(a)**	What is Stereoisomerism? Explain two types of it in detail with examples.	**07**
	(b)	Give a brief account of distillation methods of liquid organic compounds.	**07**
		OR	
Q.5	**(a)**	Give a brief account of the optical isomerism of Lactic acid.	**07**
	(b)	Give a brief account of purification methods of solid organic compounds.	**07**

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