Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-III Remedial Examination March 2010

Subject code: 132805 **Subject Name: ORGANIC CHEMISTRY**

Date: 12 / 03 / 2010 **Time: 11.00 am – 01 .30 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)**	Explain in detail about homolytic and heterolytic fission of a covalent bond.	**07**
	(b)	**1.**What is huckel rule? Explain in detail about the aromaticity.	**04**
		2.Explain structural isomerism.	**03**
Q.2	**(a)**	What are the general properties of alkyl halides? Explain different methods of preparation of alkyl halides.	**07**
	(b)	**1.** Explain Electromeric effect. What is meant by +E and –E effects?	**04**
		2. Write a note on sublimation and fractional crystallization.	**03**
		OR	
	(b)	**1**. Explain Inductive effect. What is meant by +I and –I effects?	**04**
		2. Write a note on distillation. Explain Vaccum distillation.	**03**
Q.3	**(a)**	What is optical activity? Explain how optical isomerism is determined by polarimeter?	**07**
	(b)	**1.** Show the aromatic behavior of heterocyclic compound?	**04**
		2. Explain aufbau and hund's principle to determine the electronic configuration of any elements.	**03**
		OR	
Q.3	**(a)**	What is polynuclear hydrocarbon? Write in detail the properties and resonating structure of Naphthalene and Anthracene.	**07**
	(b)	Write in detail the preparation and properties of 1. Furan 2. Quinoline	**07**
Q.4	**(a)**	Explain how the quantum no is determined by using the energy wave equation.	**07**
	(b)	Define the following: **1.** Markonikoff's rule **4**. Pauli's principle **2.** Dipole moment **5**. Plane polarized light **3.** Melting point **6.** Enantiomers **7**. Bond energy	**07**
Q.4	**(a)**	Write the general method of preparation and properties of Carboxylic acid and esters.	**07**
	(b)	Write in detail about the Electrophillic and Nucleophillic substitution reactions.	**07**
Q.5	**(a)**	Write in detail the preparation, properties and uses of Naphthalene.	**07**
	(b)	Explain the Geometrical isomerism with examples.	**04**
		Explain the different qualitative test to determine the presence of Nitrogen, Halogen and Sulphur in an organic compound.	**03**
		OR	
Q.5	**(a)**	Write in detail the preparation, properties and uses of Anthracene.	**07**
	(b)	**1.** Write the difference between aldehydes and ketones.	**03**
		2. Write the preparation of, 1. Phenol by cummene process 3. Thiophene 2. Acetone 4. Acetaldehyde	**04**

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