GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-III Examination-Dec.-2011

Subject code: 130404   **Date: 15/12/2011**
Subject Name: Organic Chemistry & Unit Processes
Time: 2.30 pm -5.00 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)	What are covalent bonds? Explain various types of covalent bond with suitable examples.	**07**
	(b)	What is isomerism? Classify stereoisomerism. Explain Walden inversion.	**07**
Q.2			
	(a)	What are carbohydrates? Classify carbohydrates giving suitable examples. Explain the structural formula of glucose.	**07**
	(b)	What are aldohexoses and ketohexoses? Convert glucose to fructose.	**07**
		OR	
	(b)	What is carboxylic acid? Classify carboxylic acid giving examples.	**07**
Q.3			
	(a)	Give general steps involved in metallurgy. Draw neat and labeled diagram of blast furnace for metallurgy of iron.	**07**
	(b)	Mention various properties of metals giving illustrations.	**07**
		OR	
Q.3	(a)	Mention destructive and non destructive methods of hydrogenation for conversion of petroleum products.	**07**
	(b)	Explain thermodynamics and kinetics of Fisher-Tropsch operation for producing liquid fuels.	**07**
Q.4			
	(a)	What is hybridization? Classify various types of hybridization taking place in compounds.	**07**
	(b)	Differentiate between types of nucleophyllic substitution reaction.	**07**
		OR	
Q. 4	(a)	Explain analytical methods for analyzing glucose molecule with its chemical properties and its preparation.	**07**
	(b)	Explain industrial applications of oxidation process.	**07**
Q.5			
	(a)	Give physico-chemical properties of copper and also explain bessmerisation process.	**07**
	(b)	What is halogination? Explain the mechanism of the same. Convert benzene to benzenehexachloride.	**07**
		OR	
Q.5	(a)	Explain reductive Amination reaction with illustrations and also explain the process of Amination by aminolysis.	**07**
	(b)	Explain continuous and batch nitration in detail. Which is more beneficial and why?	**07**

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