Date:14/11/2017

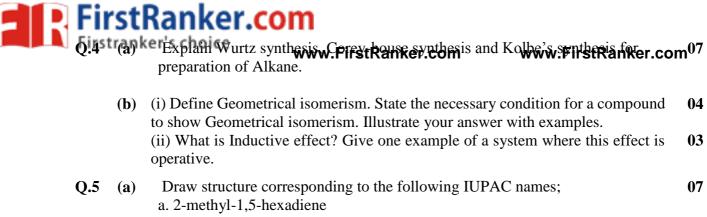


GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (OLD) EXAMINATION - WINTER 2017 Subject Code:133501 Date:

Subject Name: Organic Chemistry for Technologists-I

Time: 10:30 AM to 01:00 PM Instructions:			Total Marks: 70	
Ins	1. 2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Write the structural formulas and give IUPAC names for all isomeric alcohols of the molecular formula C ₅ H ₁₂ O	07	
	(b)	How are alkanes prepared? Give their classification.	07	
Q.2	(a)	How does CH≡CH react with the following reagents? (i) H ₂ /Pd (ii) H ₂ /Pd/BaSO4 (iii) HBr (iv) Cu ₂ Cl ₂ /NH ₄ OH (v) Na/liqNH ₃ (vi) AgNO ₃ /NH ₄ OH (vii) HCN/Ba(CN) ₂	07	
	(b)	What is the structure of carbonyl group? How does it react with; a. HCN b. NaHSO ₃ c. NH ₂ OH.	07	
	(b)	OR How are thioethers prepared? Discuss their chemical properties.	07	
	(6)	Tiow are unocuters prepared. Discuss then enomical properties.	07	
Q.3	(a) (b)	Discuss the mechanism of SN1 and SN2 reaction of alkyl halide. 1. How does diethyl ether react with the following reagents?	07 03	
		 a. O₂/long contact b. Cold Conc. H₂SO₄ c. PCl₅ 2. A hydrocarbon (A) adds one mole of hydrogen in the presence of a platinum catalyst to form n-Hexane. When (A) is oxidized with hot concentrated KMnO₄, a single carboxylic acid containing three carbon is isolated. Give the structure and name of (A). 	04	
Q.3	(a)	 What are Carbonium ions? Arrange the following according to their increasing stability. Explain your answer. CH₃CH₂CH₂CH₂⁺ b. (CH₃)₃C⁺ CH₃CH₂(CH₃)CH⁺ 	03 04	
	(b)	2. Explain why benzyl carbonium ion is more stable than ethyl carbonium ion.Write a equation for the preparation of n-butane from,a. n-Butyl bromideb. Ethyl bromidec. 2-Butene	07	
Q.4	(a)	Write a note on: Oxidation of alcohol.	07	
Υ ••	(b)	Give only reaction for following conversion: a. n-propyl alcohol → Isopropyl alcohol b. Isopropyl bromide → n-propyl bromide c. Isopropyl alcohol → Propane OR	07	
		OK .		



(ii) What is Inductive effect? Give one example of a system where this effect is 03 **07** b. 2-ethyl-2,2-dimethyl-3-heptene c. 2-amino-3-hydroxy-4oxopentan-1-oicacid d. 1-methyl-1,3-cyclopentadiene e. 1,5-heptadiyne f. 3-chloroprop-1-ene g. 2-methyl-4-nitro-2-pentanol (b) (i) Describe homolytic & heterolytic fission of a covalent bond. How carbocation, 03 carbanion & free radicals are formed. 04 (ii) Write a note on Diazotization reaction. Write Physical properties of alcohol with explanation **07 Q.5** (a)

Write only chemical reaction for following conversion: a. Benzene →Benzoic acid

b. Benzaldehyde →Nitrobenzene

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