Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2132805 **Date: 05/06/2017**

Subject Name: Organic Chemistry

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

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

			MARKS
Q.1		**Short Questions**	**14**
	1	What is dipole moment?	
	2	Define the term: Resonance	
	3	What do you mean by isomerism?	
	4	What is the other name of Alkyl Cyanides?	
	5	Write Huckel Rule.	
	6	Commercially Urea is synthesized from which reactants?	
	7	What is sublimation?	
	8	What are protic solvents?	
	9	What do you mean by free radicals?	
	10	What is specific rotation?	
	11	What is the difference between alcohols and phenols?	
	12	What is aromaticity?	
	13	By which other name also Glycerine is known?	
	14	Which purification method is used for organic liquids?	
Q.2	**(a)**	Which are the essential conditions for effective overlap according to Molecular Orbital Theory?	**03**
	(b)	How electromeric effect differs from inductive effect?	**04**
	(c)	Explain importance of Pauli, Aufbau and Hund's rule for electronic configuration of an element.	**07**
		OR	
	(c)	Explain how homolytic and heterolytic fission are important in organic reactions?	**07**
Q.3	**(a)**	Describe asymmetric carbon atom with examples.	**03**
	(b)	How 1^0, 2^0 and 3^0 alcohols can be distinguished from their oxidation?	**04**
	(c)	Write a brief account of optical activity in organic compounds with examples. Explain the terms dextrorotatory, laevorotatory, racemic and meso as applied to optical isomers.	**07**
		OR	
Q.3	**(a)**	What are the uses of Phenol?	**03**
	(b)	Describe cis and trans geometrical isomers with example.	**04**
	(c)	Describe hydrolysis of esters by mineral acids or alkalis with necessary equations. Mention the uses of esters.	**07**

Q.4	**(a)**	Write only equations of nitration, sulphonation and bromination of Pyridine with necessary conditions.	**03**
	(b)	Mention the uses of Citric acid.	**04**
	(c)	Describe important substitution reactions of 1-Naphthol.	**07**

OR

Q.4	**(a)**	Write only equations of Oxalic acid with Glycerol, H_2SO_4 and Ethylene glycol.	**03**
	(b)	Explain preparation methods of Antraquinone.	**04**
	(c)	Describe chemistry of H acid.	**07**

Q.5	**(a)**	What are the uses of Nitrobenzene?	**03**
	(b)	Explain Diazotisation reaction with example.	**04**
	(c)	Give an account of purification methods of organic solids.	**07**

OR

Q.5	**(a)**	Write a note on heterocyclic compounds.	**03**
	(b)	Explain polarity of bonds.	**04**
	(c)	Describe the identification process of unknown organic compound in the laboratory.	**07**

****