

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III(New) • EXAMINATION – WINTER 2016****Subject Code:2130404****Date:09/01/2017****Subject Name:Fundamentals of 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 are hydrocarbons?	
	2 Homolytic fission gives which types of species?	
	3 Name the Electrophile formed during nitration process.	
	4 Name the chemical used for alkylation of Benzene.	
	5 Fructose is which type of carbohydrate?	
	6 What are Diastereomers?	
	7 What do R and S stand for optically active compounds?	
	8 What is meant by amphoteric compound?	
	9 Proteins contain which type of linkage?	
	10 Name at least two amino acids.	
	11 Give full form of HPLC.	
	12 What is a dye?	
	13 Is phenolphthalein a dye?	
	14 What is chromatography?	
Q.2	(a) Define the following terms with suitable illustrations: Free radicals, Carbanion and Electrophile.	03
	(b) Differentiate between Nucleophile and Electrophile.	04
	(c) What are organic reactions?	07
OR		
	(c) Explain fission reactions in details along with their applications.	07
Q.3	(a) Define the following terms with suitable illustrations: Resonance, Hyperconjugation and Inductive effect.	03
	(b) What is Diazotization?	04
	(c) Explain Friedel-Craft reaction with alkylation and acylation process	07
OR		
Q.3	(a) Define the following terms with suitable illustrations: Steric Effect, Reduction and Polymerization	03
	(b) What is Amination and Hydrogenation? Give examples.	04
	(c) What are Unit Processes? Explain Halogenation process with its applications.	07
Q.4	(a) Define the following terms with suitable illustrations: Carboxylic Acid, Esters and Acid Anhydride	03
	(b) What is Esterification? Explain esterification with its mechanism and illustrations.	04
	(c) How will you convert Glucose to Fructose?	07
OR		
Q.4	(a) Define the following terms with suitable illustrations: Carbohydrates, Mono saccharides and Fermentation	03
	(b) Give manufacturing process of Glucose.	04
	(c) Explain physico-chemical properties and application of Glucose.	07

- Q.5** (a) Define the following terms with suitable illustrations: **03**
Isomerism, Chirality and Racemic mixture
- (b) Explain Enantiomerism with example. **04**
- (c) What are Amino acids? Mention classification of protein. **07**
- OR**
- Q.5** (a) Define the following terms with suitable illustrations: **03**
Colour, Dye and Chromatography
- (b) Give classification of Dyes based on their mode of application. **04**
- (c) Write short notes on : **07**
- (1) Lambert Beer Law
- (2) Thermo Gravimetric Analysis
