

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-III (NEW) EXAMINATION – WINTER 2024

Subject Code: 3130407

Date: 10-12-2024

Subject Name: Chemistry for Biotechnology

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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Define the following terms: Biotechnology, Chemistry, Hydrocarbon.	03
	(b) What are the hydrocarbons classify in detail?	04
	(c) Explain electrophilic substitution reaction with suitable examples.	07
Q.2	(a) Define the following terms: Ions, Cation, Anion.	03
	(b) What are standard solutions? How will you prepare a liter of 1 N sodium hydroxide solution?	04
	(c) What are reactive intermediate? Explain in detail.	07
	OR	
	(c) Explain electron displacement effect with examples.	07
Q.3	(a) Define the following terms: Unit Process, Nitration, Halogenations	03
	(b) What are different types of reactions based on unit processes?	04
	(c) Explain sulphonation in detail.	07
	OR	
Q.3	(a) Define the following terms: Organic Acid, Acid anhydride, Esterification.	03
	(b) Mention the preparation and properties of acetic acid.	04
	(c) Explain derivatives of carboxylic acid in detail.	07
Q.4	(a) Define the following terms: Isomer, Specific Rotation, Polarimeter.	03
	(b) Discuss optical activity in tartaric acid.	04
	(c) Explain geometrical isomerism and racemic mixture.	07
	OR	
Q.4	(a) Define the following terms: Drugs, Analgesics, Antipyretic.	03
	(b) Mention different types of drugs in the market.	04
	(c) Explain steps involved for the preparation of drugs in detail.	07
Q.5	(a) Define the following terms: Color, Dye, Pigment.	03
	(b) Discuss color theory.	04
	(c) Classify & explain types of dyes with suitable examples.	07
	OR	
Q.5	(a) Define the following terms: Chromatography, Colometry, Potentiometry.	03
	(b) Discuss Lambert Beer's law.	04
	(c) Explain with application: Chromatography & UV Spectroscopy.	07
