

Enrolment No./Seat No _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III EXAMINATION – SUMMER 2025

Subject Code:3130407

Date:06-06-2025

Subject Name:Chemistry for Biotechnology

Time:02:30 PM TO 05:00 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 with suitable examples Carbonium ion Valency Electrophile	03
(b) Write a short note on Nucleophile and Electrophile.	04
(c) Explain organic reactions with its classification and examples.	07
Q.2 (a) Define the following terms with suitable examples Primary Standard solution Titration Neutralization	03
(b) Write a short note on hydrocarbons.	04
(c) Explain electrophilic aromatic substitution reaction with example.	07
OR	
(c) Explain nucleophilic aromatic substitution reaction with example.	07
Q.3 (a) Define the following terms with suitable examples Halogenations Hydrolysis Reduction	03
(b) Write a short note on Unit Processes	04
(c) Explain reactive intermediates in detail.	07
OR	
Q.3 (a) Define the following terms with suitable examples Acid Amides Carboxylic acid Acid Anhydrides	03
(b) Write a short note on Esterification.	04

(c) Explain Geometrical Isomerism in detail with examples. 07

- Q.4 (a) Define the following terms with suitable examples 03
Optical activity
Racemic mixture
Plane polarized light
(b) Write a short note on: Enantiomers and Diastereomers. 04
(c) Explain optical activity in Lactic Acid and Tartaric Acid. 07

OR

- Q.4 (a) Define the following terms with suitable examples 03
Analgesics
Anti inflammatory
Anti pyretic
(b) Write a short note on: Types of drugs with suitable examples. 04
(c) Explain steps of Drug preparation and delivery. 07

- Q.5 (a) Define the following terms with suitable examples 03
Chromophore
Colour
Pigment
(b) Write a short note on: Theory of Colour. 04
(c) Explain different types of Dyes and Pigments. 07

OR

- Q.5 (a) Define the following terms with suitable examples 03
Spectroscopy
Chromatography
Calorimetric analysis.
(b) Write a short note on: Types of Chromatography. 04
(c) Explain principles of various types of instrumental methods. 07
