Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF SCIENCE - HONOURS/ HONOURS WITH RESEARCH - SEMESTER - III
EXAMINATION - WINTER 2025

Subject Code: BS03001031 **Date: 13-11-2025**

Subject Name: Enzyme Technology

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. Draw neat and clean diagrams as required

		Marks
Q.1	Write a note on following	**20**
(1)	Write two differences between enzyme and chemical catalyst	
(2)	What is a suicide inhibitor?	
(3)	What are abzymes and ribozymes?	
(4)	What are isoenzymes? Give one example	
(5)	What is the significance of Km and Vmax?	
(6)	What is flux balance analysis?	
(7)	What is a cofactor? Give one example	
(8)	Define allosteric enzyme and mention its importance	
(9)	What are the advantages of immobilized enzymes?	
(10)	Name two industrial enzymes and its applications	
Q.2	Answer the following (Any 2 out of 3)	**20**
(1)	Discuss the structure, classification, and properties of enzymes with suitable examples	
(2)	Explain various types of enzyme inhibition and methods to determine Ki	
(3)	Discuss the large-scale production, immobilization, and applications of enzymes in industry	
Q.3	Answer the following (Any 6 out of 8)	**30**
(1)	Discuss isoenzymes and their diagnostic significance	
(2)	Discuss site-directed mutagenesis and enzyme engineering	
(3)	Explain the concept of holoenzyme, apoenzyme, and cofactor	
(4)	Discuss experimental methods for flux distribution using isotope labelin	
(5)	Explain the need and scope of metabolic engineering	

(6) Write a note on the significance of activation energy and transition-state theory

(7) Write a note on multienzyme complexes and multifunctional enzymes

(8) Write a note on the historical development of enzymology

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