Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(NEW) • EXAMINATION – WINTER 2016

Subject Code:2170401 **Date:18/11/2016**

Subject Name:Enzymes and Proteins

Time:10.30 AM to 1.00 PM **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Give a comparative account on "Lock and Key" hypothesis and "Induced-fit" theory.	**07**
	(b)	Where and how will you use immobilized enzymes? Illustrate.	**07**
Q.2	**(a)**	Explain the principle and procedure of affinity chromatography for protein purification.	**07**
	(b)	Describe specificity of enzyme action with suitable examples.	**07**
		OR	
	(b)	Discuss the concept of active site and energetics of enzyme substrate complex formation.	**07**
Q.3	**(a)**	Explain the kinetics of single substrate reactions with example.	**07**
	(b)	Give the derivation of Michelis-Menten equation and comment on the significance of it.	**07**
		OR	
Q.3	**(a)**	Write the benefits and limitations of enzyme immobilization.	**07**
	(b)	How pH and temperature affects enzyme activity? Comment on the deactivation kinetics.	**07**
Q.4	**(a)**	Describe purification of crude enzyme extracts from microbial sources.	**07**
	(b)	Comment on the commercial applications of various enzymes in different industries.	**07**
		OR	
Q.4	**(a)**	Describe purification of crude enzyme extracts from plant sources.	**07**
	(b)	How will you use enzymes for analytical and diagnostic purposes?	**07**
Q.5	**(a)**	Explain allosteric regulation of enzyme action with example.	**07**
	(b)	Comment on protein folding patterns and modular structure of proteins.	**07**
		OR	
Q.5	**(a)**	Explain the use of computers in the field of protein science.	**07**
	(b)	Comment on the secondary, tertiary and quaternary structures of proteins.	**07**

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