Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIIth SEMESTER–EXAMINATION – MAY/JUNE- 2012

Subject code: 170401 **Date: 24/05/2012**

Subject Name: Enzymes & Proteins

Time: 02:30 pm – 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.**

Q.1	**(a)**	What is protein folding? Comment on the protein modular structure and protein evolution.	**07**
	(b)	Describe different levels of protein organization.	**07**
Q.2	**(a)**	How base sequence in the DNA determines the amino acid sequence in protein?	**07**
	(b)	What is protein structure? How native state of protein structure is stabilized?	**07**
		OR	
	(b)	How can you determine the structures of different proteins?	**07**
Q.3	**(a)**	Compare and contrast the physical and chemical techniques used for the immobilization of enzymes.	**07**
	(b)	How protein functions are integrated? Can the functions of different proteins be controlled?	**07**
		OR	
Q.3	**(a)**	Explain the principle, procedure and applications of thin layer chromatography.	**07**
	(b)	Explain the principle, procedure and applications of affinity chromatography.	**07**
Q.4	**(a)**	Discuss the use of computer in the field of protein science. Explain the expression pattern of proteins in space and time.	**07**
	(b)	Describe the interaction of protein with ligand and comment on the catalysis by enzymes.	**07**
		OR	
Q.4	**(a)**	What are homologous proteins? Describe the evolution of globins and NAD binding domains of dehydrogenases.	**07**
	(b)	Discuss competitive, non-competitive and uncompetitive methods of enzyme inhibition.	**07**
Q.5	**(a)**	Explain the "Lock and Key" hypothesis of enzyme action. Enlist different classes of enzymes with suitable example.	**07**
	(b)	Comment on the specificity of enzyme with suitable example.	**07**
		OR	
Q.5	**(a)**	Explain the principle and procedure of electrophoresis technique used for the purification of proteins.	**07**
	(b)	What are molecular chaperons? Give classification of molecular chaperons and describe their roles in protein folding.	**07**

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