

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E SEM-VII Examination-Nov/Dec.-2011****Subject code: 170401****Date: 19/11/2011****Subject Name: Enzymes & Proteins****Time: 10.30 am-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.

- Q.1** (a) Define enzyme immobilization. Describe various physical and chemical techniques for immobilization of enzymes. **07**
- (b) Define gene, genome and genomics. How gene sequences determine amino acid sequences? **07**

- Q.2** (a) What do you mean by protein structure? Explain protein structures and functions. **07**
- (b) Explain protein folding pattern, protein modular structure and protein evolution. **07**

OR

- (b) Comment on integration and control of protein function. **07**

- Q.3** (a) Discuss about the stabilization of the native state of protein structure. **07**
- (b) Describe various approaches used for the determination of protein structure. **07**

OR

- Q.3** (a) What do you mean by structural relationship among homologous proteins? Describe the evolution of globins and NAD binding domains of dehydrogenases. **07**
- (b) Describe the evolution of visual pigments and related molecules. How do proteins evolve new functions? **07**

- Q.4** (a) Explain the solubility of globular protein. Comment on the physiological significance of enzymes in a biological system. **07**
- (b) Discuss the various strategies required for protein purification. **07**

OR

- Q.4** (a) Define chromatography, mobile phase, stationary phase, R_f value and void volume. Explain the principle of TLC. **07**
- (b) Explain the principle of ion-exchange chromatography. Describe various resins used for biological system. **07**

- Q.5** (a) Discuss the role of molecular chaperons in protein folding. Give classification of molecular chaperons. **07**
- (b) Define enzyme, cofactor, apoenzyme and holoenzyme. Describe different classes of enzymes. **07**

OR

- Q.5** (a) Explain different hypotheses for depicting the specificity of enzyme – substrate reaction. **07**
- (b) What is enzyme inhibition? Describe various types of enzyme inhibition. **07**
