

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VII EXAMINATION – WINTER 2015**

**Subject Code: 170401****Date: 12/12/2015****Subject Name: Enzymes & Proteins****Time: 10:30am to 1:00pm****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) Comment on primary, secondary and tertiary structures of protein organization. **07**  
(b) Describe various uses of computer in the field of protein science. **07**
- Q.2** (a) Describe principle, procedure and uses of affinity chromatography in the field of protein science. **07**  
(b) Describe principle, procedure and uses of ion-exchange chromatography in the field of protein science. **07**
- OR**
- (b) Comment on the strategies of protein mixture purification. **07**
- Q.3** (a) Explain the principle, procedure and applications of gel electrophoresis in the field of protein science. **07**  
(b) Compare and contrast one-dimensional and two-dimensional gel electrophoresis techniques. **07**
- OR**
- Q.3** (a) Comment on physical methods of enzyme immobilization. **07**  
(b) Comment on chemical methods of enzyme immobilization. **07**
- Q.4** (a) Explain protein domain, protein motif and protein modular structure. **07**  
(b) How protein functions are integrated in the living system? How the function of each protein is being controlled? **07**
- OR**
- Q.4** (a) Compare the evolution of globin protein with that of dehydrogenase. **07**  
(b) Comment on protein folding process and roles of molecular chaperons. **07**
- Q.5** (a) Enlist various kinds of enzyme specificities. Discuss any four of them. **07**  
(b) Enlist various kinds of enzyme inhibitions. Discuss any two of them. **07**
- OR**
- Q.5** (a) Comment on the base sequence of DNA and amino acid sequence of protein and their relationship. **07**  
(b) Enlist protein stabilizing forces and explain any four of them. **07**

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