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3/H-64 (iii) (Syllabus-2015)

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(October)

BIO-CHEMISTRY

(Honours)

Paper : III-T

(Proteins and Enzymes)

(BCHEM-301)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

**Answer four questions, taking at least
one from each Part**

PART—A

1. (a) What is protein isolation? What are the
criteria of homogeneity? 3+5=8
- (b) Discuss the process of 'salting out' in
terms of protein purification. 6

(2)

2. (a) Describe the principle of gel filtration and its uses in protein purification. 8
- (b) Discuss the salient features of protein sequencing using Edman degradation analysis. 6

PART—B

3. (a) What are enzymes? What are the characteristic features that make enzyme an efficient catalyst? 2+8=10
- (b) How is the units of enzyme activity expressed? 4
4. Write notes on the following : 7×2=14
- (a) Enzyme classification
- (b) Factors affecting enzyme activity
5. (a) What are active sites? Discuss why the enzyme structure is large although only a small number of amino acids is involved in bonding and catalysis. 2+5=7
- (b) What are coenzymes and cofactors? Discuss the role of pyridoxal phosphate as a coenzyme. 3+4=7

(3)

6. (a) Derive Michaelis-Menten rate equation using steady-state hypothesis. 8
- (b) Discuss the significance of K_M and V_{max} . 6
7. (a) What are the advantages and disadvantages of Lineweaver-Burk plot? 4
- (b) Discuss the mechanism of action of lysozyme. 10
