

B.Sc. (CBCS Pattern) Semester-IV  
**USBCT-C07 - Biochemistry Paper-I - Enzymology**

P. Pages : 2

Time : Three Hours



**GUG/W/24/11998**

Max. Marks : 50

- Notes :
1. All questions are compulsory.
  2. All questions carry equal marks.

1. Discuss in detail the regulation of enzymes by allosteric and covalent modulation with example. **10**

**OR**

- a) Describe enzyme specificity with the help of Fischer's Lock and Key hypothesis. **2½**
- b) Write a note on multienzyme complexes. **2½**
- c) Give the classification of enzymes. **2½**
- d) What are isoenzymes? Explain with example. **2½**

2. Discuss in detail mechanism of enzyme action with single and bi-substrate reaction. **10**

**OR**

- a) Write a note on role pyridoxine as coenzyme. **2½**
- b) Describe the effect of pH on enzyme activity with example. **2½**
- c) Write a note on active site of enzyme. **2½**
- d) Describe the effect of temperature on enzyme activity with example. **2½**

3. Derive the Michaelis-Menton equation for the measurement of velocity of reaction. **10**

**OR**

- a) Give the importance of  $K_{cat}/K_m$  **2½**
- b) Giving examples explain reversible and irreversible inhibition of enzymes. **2½**
- c) Describe the ping-pong mechanism for bi-substrate enzyme reaction. **2½**
- d) Write a note on non-competitive inhibition. **2½**

4. Discuss in detail industrial applications of immobilized enzymes. 10

OR

- a) Write a note on criterion for enzyme purity. 2½
- b) Discuss the methods of enzyme immobilization. 2½
- c) Describe the concept of enzyme assay and its importance. 2½
- d) Describe the various fractionation procedures. 2½

5. Attempt **any ten** of the following.

- a) What is cofactor? 1
- b) Define apoenzyme. 1
- c) Who crystallizes urease enzyme? 1
- d) What is prosthetic group? 1
- e) What is activation energy? 1
- f) By increasing enzyme concentration rate of enzymatic reaction increases..... True or False. 1
- g) Define turnover number. 1
- h) What is ordered sequential mechanism? 1
- i) What is significance of double reciprocal plot? 1
- j) Name any one method of enzyme assay? 1
- k) What is full form of IU? 1
- l) Define specific activity of enzyme? 1

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