

Roll No.

Total No. of Pages : 02

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**B.Tech. (Bio Technology) (Sem.-6)**  
**BIOENERGETICS AND ENZYME TECHNOLOGY**

Subject Code : BTBT603-18

M.Code : 79669

Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a) What are Cofactors and Prosthetic groups?
- b) Define  $K_m$  and  $V_{max}$ .
- c) What are immobilized enzymes?
- d) Define Isozymes.
- e) What is transition state?
- f) What is Absolute and Group Specificity?
- g) Why do Substrate analogues act as inhibitors of enzymes?
- h) What are SI units of Enzyme activity?
- i) What is Enthalpy and Entropy?
- j) What are Zymogens and what is their physiological Significance?

### SECTION-B

2. Discuss about Standard Free Energy change and Energy rich compounds.
3. Write about Reversible Enzyme inhibitions.
4. Discuss Hypothesis for active site structure and specificity.
5. Explain factors affecting Enzyme activity.
6. Discuss Enzyme regulation by covalent modification and Proteolytic activation (zymogens).

### SECTION-C

7. Discuss determination of  $K_m$  and  $V_{max}$  using Michaels Menten rate Equation and Lineweaver Burk Plot.
8. Deliberate on various mechanisms of Enzyme catalysis. Give examples.
9. Write principle, techniques and applications of Immobilization.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**