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**BCH 451**

**II Semester M.Sc. Examination, September/October 2022**  
**BIOCHEMISTRY**  
**Enzymology**

Time : 3 Hours

Max. Marks : 70

1. Answer **ten** of the following : **(10×2=20)**

- a) Define specific activity of an enzyme.
- b) Give the significance of  $K_m$  and  $V_{max}$ .
- c) Differentiate homotropic and heterotropic effectors.
- d) Distinguish reversible and irreversible inhibition of enzyme activity.
- e) What is orbital steering in enzyme catalysis ?
- f) What do the IUB classification numbers of an enzyme signify ?
- g) What is multifunctional enzyme ? Give an example.
- h) How is fold purity of enzyme determined ?
  - i) What are endpoint kinetic assays ?
  - j) What is suicide inhibition ?
- k) What are abzymes ?
  - l) What is positive Co-operativity ?

Answer **any five** of the following : **(5×10=50)**

2. a) Explain how enzymes reduce activation energy of a reaction.  
b) What are coupled enzyme assays ? Explain with an example. **(5+5=10)**
3. a) Describe the mechanism of action of lysozyme.  
b) Explain the allosteric regulation and functional mechanism ATCase. **(5+5=10)**

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4. a) Explain how criteria of purity for enzymes established ?  
b) Derive MM equation for single substrate enzyme catalyzed reaction. **(5+5=10)**
5. a) Illustrate the effect of pH and temperature on enzyme catalysed reaction.  
b) Discuss the IUB classification of enzymes with an example. **(5+5=10)**
6. a) Enumerate the steps involved in isolation of enzymes from natural sources.  
b) Explain the mechanism of action of ribonuclease. **(5+5=10)**
7. a) Describe the immobilization of enzymes and its applications in industries.  
b) Discuss the determination of active site of an enzyme. **(5+5=10)**
8. a) Discuss co-enzymic action of NAD and FAD.  
b) Explain the mechanism of action of chymotrypsin. **(5+5=10)**
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