**FEMT R09 December 2011**

**SET -1**

1. Explain the role of enzymes in food and pharmaceutical industries.
2. Discuss in detail about various techniques used in purification of enzymes.
3. Explain
   1. What is transition state theory?
   2. Explain the effect of substrate concentration on the rate of an enzyme catalysed reaction.
4. What are non-natural amino acids? Explain various techniques used for identification of amino acids with a suitable example.
5. What is isozyme? Describe in detail about various types of enzyme inhibition.
6. What is meant by immobilization of enzyme? Describe different methods of immobilization of enzymes.
7. Discuss the following
   1. How do you determine the number of active sites in enzyme.
   2. Explain in detail about burst kinetics.
8. Discuss the following
   1. Briggs – Halder equation
   2. Lineweaver – burk plot.

**SET -2**

1. Give one example of the reaction catalysed by each of the following classes of enzymes.
   1. Oxido – reductases.
   2. Transferasesc.
   3. Hydrolases.
   4. Isomerases.
2. Describe briefly about various techniques used in assay of enzymes.
3. Explain how fluid forces, chemical agents, radiation and temperature affect the enzyme activity.
4. Explain the following
   1. Give an account of acid – base behaviour of amino acids.
   2. Write about the Zwitter ion form of amino acids.
5. Discuss the following
   1. Quasi steady state hypothesis.
   2. Multiple substrate kinetics.
6. What is the effect of inhibitors on the reaction kinetics of the enzyme.
7. Write briefly on
   1. Burst kinetics of Chymotrysin.
   2. Significance of enzyme kinetics.
8. What are the effects of inhibitors, temperature, PH on immobilized enzyme catalyst activity and deactivation.

**SET -3**

1. Write short notes on the following
   1. Fischer lock and key hypothesis.
   2. Medical applications of enzymes.
2. Explain the following
   1. Enzyme purification by Ammonium sulphate precipitation.
   2. Enzyme concentration by Ultra filtration.
3. Describe the factors that influence the activity of enzymes. Why do all enzymes show a PH optimum?
4. Explain in detail about the physical and chemical properties of amino acids.
5. Comment on the following
   1. Ping Pong mechanisms.
   2. Multi substrate reactions.
6. What are the suicide inhibitors? How and Why a substrate and product inhibit the enzyme catalysed reaction?
7. a) Write in detail about pre-steady state kinetics.

b) Describe in detail about the importance of active sites in enzymes.

1. Discuss the effects of external mass transfer resistance of immobilized enzyme reactions.