Seat No. : _____

AE-104

April-2016

B.Sc., Sem.-VI

Biochemistry – Paper-310

Time : 3 Hours] **[Max. Marks : 70**

1. (a) Derive the Michaelis Menten equation and give the significance of V_{max} and K_m. **7**

   (b) Explain kinetics of competitive inhibition using Lineweaver Burk plot, Woolf's plot, Hoffstie's plot and Hane's plot. **7**

   OR

   (a) Explain the MWC and KNF models for allosteric enzymes.

   (b) Explain the inhibition kinetics for allosteric enzymes using ATCase as an example.

2. (a) What are the precautions taken while handling enzymes ? **7**

   (b) How do spectrophotometric methods enable quantitate enzymes ? Give examples. **7**

   OR

   Explain the advantages and disadvantages of the following methods with examples in quantification of enzymes : **14**

   (i) Electrochemical methods

   (ii) Polarimetric methods

   (iii) Chromatographic method

3. Write in detail the different methods of fractionation used in protein purification. **14**

   OR

   (a) What are the various methods used to determine whether the isolated protein is pure ? **7**

   (b) Why is there a need to purify proteins and give the significance of purification table ? **7**

4. Write in detail on Immobilized enzymes and their applications. **14**

OR

(a) Write in detail on medical and therapeutical applications of enzymes with examples. **7**

(b) Write in brief on industrial applications of enzymes. **7**

5. Answer the following : **14**

(i) Define enzyme unit and specific activity.

(ii) What are suicide inhibitors ? Give example.

(iii) What are Biosensors ?

(iv) What do you understand by feedback inhibition ? Give an example.

(v) Give two precautions one needs to take while carrying out an enzyme assay.

(vi) Give two applications of proteases.

(vii) Why does specific activity decrease with increase in purification fold ?

———————