Fourth Semester B. Sc. (Part - II) Examination

BIOCHEMISTRY

Paper - I

(Enzymology)

Time : Three Hours] [Max. Marks : 50

N. B. : (1) All questions are compulsory and carry equal marks.
(2) Draw diagram wherever necessary.

1. Describe the mechanism of action of glycogen phosphorylase. 10

OR

(a) Describe proximity and orientation effect in enzyme catalysis. 5

(b) Describe the induced fit model of enzymes action. 5

2. Explain the mechanism of action of Ribonuclease. 10

OR

(a) Describe the role of biotin as a Co-enzyme. 5

(b) Describe how the variations in temperature can affect the activity of an enzyme. 5

3. (a) Give the importance of K_{cat}/K_m. $2\frac{1}{2}$

(b) Write the assumption of Michaelis–Menten equation. $2\frac{1}{2}$

(c) What are competitive inhibitors. Graphically show the competitive inhibition. $2\frac{1}{2}$

(d) Describe the ping pong reaction with one example. $2\frac{1}{2}$

OR

(e) Derive the LB equation. $2\frac{1}{2}$

(f) Write a note on uncompetitive inhibition. $2\frac{1}{2}$

(g) Describe the sequential reactions with one example. $2\frac{1}{2}$

(h) Write the Michaelis–Menten equation and give its graphical representation. $2\frac{1}{2}$

4. Write in detail the different methods for fractionation of enzymes based electrical charge on the enzyme. 10

OR

Describe in detail the enzyme assay methods giving example. 10

5. Solve any **ten** :—

(i) Name any two classes of enzymes. 1

(ii) What is a coenzyme ? 1

(iii) Define allosteric enzymes. 1

(iv) Name on coenzyme of Riboflavin. 1

(v) How many peptide chains are present in chymotrypsin ? 1

(vi) What is meant by temperature quotient ? 1

(vii) What is the meaning of random bisubstrate reaction ? 1

(viii) What is meant by non-competitive inhibitor ? 1

(ix) What is meant by single reciprocal plot ? 1

(x) Name two methods for separation of enzymes based on molecular size. 1

(xi) Define 'katal'. 1

(xii) Define salting-out'. 1