

B.Sc. (Part—II) Semester—IV Examination**4S : BIOCHEMISTRY****(Enzymology)**

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory.

(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks : 2

- (i) A Coenzyme required in transamination is _____.
- (ii) In Line Weaver-Burk plot, the x-intercept represents _____.
- (iii) In competitive inhibition, the inhibitor competes with _____.
- (iv) _____ ions are cofactors for Hexokinase.

(B) Choose correct alternative : 2

- (i) The following Coenzyme takes part in hydrogen transfer reactions :
 - (a) Tetrahydrofolate
 - (b) Coenzyme A
 - (c) Coenzyme Q
 - (d) Biotin
- (ii) Lactate dehydrogenase is a :
 - (a) Monomer
 - (b) Dimer
 - (c) Tetramer
 - (d) Hexamer
- (iii) Different isoenzymes of an enzyme have the same :
 - (a) Amino acid sequence
 - (b) Michaelis Constant
 - (c) Catalytic activity
 - (d) All of the above
- (iv) Allosteric inhibition is also known as :
 - (a) Competitive inhibition
 - (b) Non competitive inhibition
 - (c) Feedback inhibition
 - (d) None of the above

(C) Answer in **ONE** sentence :— 4

- (i) Marker enzyme
- (ii) K_m
- (iii) Holoenzyme
- (iv) Immobilized enzyme.

2. Explain : 4

- (a) Metallo Enzymes 4
- (b) Nomenclature of enzymes. 4
- (c) Isoenzymes. 4

OR

(p) Multienzyme complexes.

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(q) Four digit classification of enzymes.

4

(r) Active site.

4

3. (a) Explain any one test for homogeneity.

4

(b) Describe the effect of pH on enzyme activity.

4

(c) Explain K_m and V_{max} with the help of Line Weaver Burk Plot.

4

OR

(p) Explain in short Ping-Pong mechanism.

4

(q) Describe any one method used for isolation of enzyme.

4

(r) Describe enzyme assay briefly.

4

4. Describe in detail competitive inhibition with the help of double reciprocal plot.

12

OR

Discuss zero order and first order reaction Kinetics.

12

5. Describe the role of :

(a) THF.

4

(b) FAD and FMN.

4

(c) Pyridoxal phosphate.

4

OR

Explain :

(p) Allosteric inhibition.

4

(q) Metal activated enzymes.

4

(r) Coenzyme Q.

4

6. Describe in short Lock and Key hypothesis and induced fit model.

12

OR

Give a brief account of acid-base catalysis and covalent catalysis.

12

7. Describe :

(a) Industrial application of immobilized enzymes.

4

(b) Production of glucose-fructose syrup from sucrose.

4

(c) Use of Lactose in dairy industry.

4

OR

(p) Use of proteases in food.

4

(q) Medical applications of enzymes.

4

(r) Production of glucose from starch.

4