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SEAT No. _____

SARDAR PATEL UNIVERSITY

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T.Y.B.Sc. 5TH SEMESTER EXAMINATION OCTOBER 2025

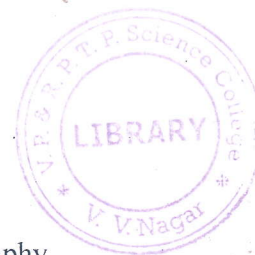
BIOCHEMISTRY: USO5CBCH52 TITLE: ENZYMOLOGY

Date: 06/10/2025 Monday Time: 10:00 AM TO 1:00PM TOTAL MARKS: 70

Q.1 Select proper option from following MCQ.

[10]

- 1) Protein part of enzyme is _____.
a) Apoenzyme b) co-enzyme c) holoenzyme d) Isoenzyme
- 2) At the optimum temperature enzyme reaction rate:
a) decrease b) increase c) Reaches maximum and steady (d) no change
- 3) Which of the following Class of enzyme involve in redox reaction _____.
a) Oxidoreductase b) Ligase c) Isomerase d) Hydroxylase
- 4) Which of the following method based on size / mass?
a) Gel filtration b) Electrophoresis c) change in pH d) Affinity chromatography
- 5) Which of the following based on ploarity?
a) Gel filtration b) Electrophoresis c) Ion exchange chromatography
d) Affinity chromatography
- 6) Which of the following act as a anion exchanger for ion exchange chromatography?
a) DEAE cellulose b) CM cellulose c) phosphocellulose d) all of these
- 7) ____ is the substrate concentration at which half maximum velocity.
a) $2V_{max}$ b) K_m c) V_{max} d) V
- 8) ____ is the number of substrate molecule transform per unit time by single enzyme molecule.
a) Turnover number b) specific activity c) Katal d) IU
- 9) high K_m value indicates ____ affinity.
a) Low b) High c) none of these d) no effect
- 10). ____ concentration is very myocardial infraction.
a. SGPT b. SGOT c. ALT d. ALP



Q.2 Short Answer Question. (Attempt TEN out of TWELVE)

[20]

1. Define enzyme and coenzymes.
2. Define metalloenzyme and its example.
3. Define turn over number of enzyme.
4. Write objective for isolation of enzyme.
5. List the factors affecting the choice of source in the enzyme purification.
6. Write methods of homogenization of mammalian tissue.
7. Significance of K_m and V_{max} .
8. Write Limitation of LB plot.
9. What is irreversible inhibition? Write its type.
10. Write normal range and use of SGPT.

(1)

[P.T.O.]

11. What is cholesterol? How its measured?
12. List enzymes used for genetic deficiency disease.

Q.3 Describe the following:

- (A) Explain: classification and nomenclature of enzymes.
(B) Explain: Lock and key model of enzyme action.

[10]

OR

- (A) Explain active site of enzyme? Write its salient feature.
(B) What is enzyme specificity? Explain in detail.

Q.4 Write short note on:

- (A) Write short note on centrifugation as a method of separation of enzyme.
(B) What is Gel filtration? Explain in detail.

[10]

OR

- (A) Write short note on ion exchange chromatography.
(B) Write short note on affinity chromatography.

Q.5 Discuss the following:

- (A) Explain the factors affecting rates of enzyme reaction.
(B) Explain feedback inhibition.

[10]

OR

- (A) Explain competitive inhibition.
(B) Explain allosteric enzyme in detail.

Q.6 Write short note on :

- (A) Creatine kinase.
(B) Uric acid

[10]

OR

- (A) Write application of enzyme in alcohol beverages and wine

[10]



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(2)