Department of Biochemistry

Duration : 1 Hr
Date of Test: **Feb 22, 2024**
Faculty Name: **Dr. Sunita Singh**
Maximum Marks: 20

Q1. Define the following: **(12)**

a. Molar extinction coefficient
b. Enzyme activity
c. Purification fold
d. Specific activity
e. Nomogram
f. Dialysis

Q2. Answer the following in brief: **(3, 3, 2)**

a. Discuss why ammonium sulfate is preferred over other salts for precipitating proteins.
b. Write the principle of Acid phosphatase enzyme assay.
c. Name any TWO natural substrate for acid phosphatase.

Department of Biochemistry

Shivaji College, University of Delhi

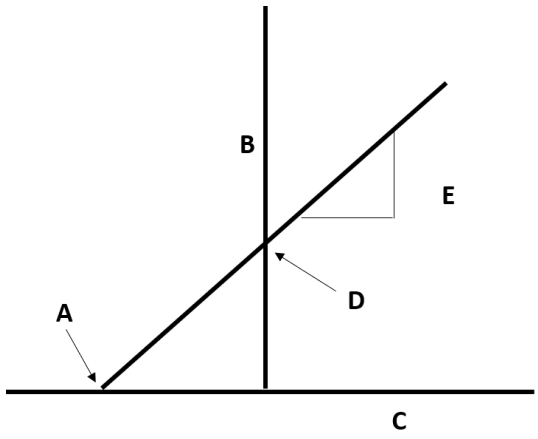
B.Sc. (Hons.) Biochemistry, SEM –II (NEP); **Enzymes (UPC: 2492011201)**

I**NTERNAL TEST** (Academic Year 2023-24)

March 21, 2024 **M Marks =25**

Q1. Identify the provided graph and label A, B, C, D and E. Mention its one advantage and disadvantage. Define Km and give its significance (any two).

(4.5, 4.5)



Differentiate between the following (Any 4): **(4 x 4 =16)**

1. Multienzyme complex and multifunctional enzyme
2. Single and double displacement reactions
3. Uncompetitive and Non-competitive inhibition
4. Positive and negative modulator
5. Prosthetic group and holoenzyme
6. Lock and key AND Induced fit hypothesis

SHIVAJI COLLEGE, UNIVERSITY OF DELHI

DEPARTMENT OF BIOCHEMISTRY

INTERNAL TEST (Academic Year 2023-24)

Name of the Course : **B.Sc. (Hons.)**
Name of the Paper : **Enzymes**
Duration : 1.30 hrs
Date of Test: **April 22, 2024**

Semester: SEM II
Faculty Name: **Dr. Sunita Singh**
Maximum Marks: 30

Q1. Give the contributions of the following scientists: (4)

i. Frederick W. Kuhne
ii. Emil Fischer
iii JBS Haldane
iv James Sumner

Q2. Mention any four features of enzyme catalyzed reactions. (4)

Q3. How are enzymes classified? Give one example of each. (8)

Q4. Differentiate between the following (any four): (8)

i. Holoenzyme and apoenzyme
ii. Metal activated enzyme and metalloenzyme
iii. Prosthetic group and coenzymes
iv. Lock and key and Induced fit hypothesis of enzyme catalysis
v. Discontinuous and continuous enzyme assays

Q5. Discuss the application of the following enzymes: (6)

i. Restriction endonucleases
ii. Streptokinase
iii. Horseradish Peroxidase
iv. Taq polymerase

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I**NTERNAL TEST** (Academic Year 2023-24)

Marks = 25

Q1. Derive Michealis Menten equation for a monosubstrate reaction. Give the significance of K_m.

Q2. Mention any three features of an enzyme catalyzed reaction.

Q3. How are enzymes classified? Give one example of each class.

Q4. Give an example of enzyme and the reaction that requires the following coenzyme:

a) Biotin

b) Coenzyme A

c) FAD

d) Lipoic acid

e) NAD^+

Q5. At what substrate concentration would an enzyme with a k_{cat} of $30s^{-1}$ and a K_m of 0.0050 M operate at one quarter of its maximum rate?

(6, 3, 8, 5, 3)