SARDAR PATEL UNIVERSITY
Class TYBSc---Sixth semester Examination, 2016
Course: US06CBIT03; Paper ---Enzymology
Date: 1st April, 2016(Friday)

Time : 2.30pm -5.30pm   Maximum marks:70

Q1   MCQs. Attempt all questions, each carries ONE mark   [10]

i. The slope in Eadie Hofstee plot is
　　a) Km/Vmax　　b) –Km　　c) 1/Vmax　　d) 1/Km

ii. In leather industry the enzyme used for bating(making leather pliable)is
　　a) Protease　b) Papain　c) Lipase　d) Cellulase

iii. Which is not a method of immobilization?
　　a) Adsorption　　　c) Crosslinking
　　b) Encapsulation　　d) Enrichment

iv. For prevention of chill haze in brewing the enzyme used is--
　　a) Lipase　　　　c) Glucose oxidase
　　b) Protease　　　d) Glucanase

v. High fructose corn syrup (HFCS) is prepared by the use of
　　a) cellulase　　　c) protease
　　b) glucoamylase　　d) glucose oxidase

vi.To remove the stain of blood and egg yolk, enzyme used is
　　a) Cellulase　　　c) Lipase
　　b) Protease　　　d) all of the above

vii The concept that all enzymes are proteins has been shattered with the discovery of following polymer component as biocatalyst.
　　(A) Glycogen　　　(B) Glycolipid
　　(C) Ribonucleic acid　　(D) Deoxy ribonucelic acid

viii. LB plot is drawn between the values of
　　a) 1/V and 1/S　　　c) V and S
　　b) S and S/V　　　d) V and V/S

ix. The enzymes where catalysis involves transfer of electrons are named as
　　a) Transferase　　　c) Oxidoreductase
　　b) Isomerase　　　d) Hydrolase

x. Value of Vmax only changes with
　　a) Non competitive inhibitors　　c) Competitive inhibitors
　　b) Uncompetitive inhibitors　　d) None of the above

Q2.   Short questions. Attempt any TEN questions (2 X 10).   [20]

　　a) Define and explain the terms V_{max} and K_m.
　　b) Define first order and zero order reactions.
　　c) Define irreversible inhibitors and give their significance.
　　d) Draw a double reciprocal plot with uncompetitive competitive inhibitors.
　　e) What do you mean by steady state kinetics?.
　　f) Define immobilization and enlist all the applications for immobilization
　　g) How enzymes can be used in baking?
　　h) Explain the role of pectinase in food industry.
　　i) Draw Eadie Hofstee plot and give its equation.
　　j) Give the classification of enzymes with an example of each.
　　k) How substrate can inhibit the enzyme catalysis?
　　l) Enlist the importance of submerged culture in enzyme production.

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Q3. a. Discuss the structure of active site of enzymes. Explain the theories proposed   [07]
             to explain its binding to substrate?
         b. Define activation energy and discuss its significance.   [03]

<div align="center">OR</div>

Q3. Describe various factors affecting enzyme activity.   [10]

Q4. a. Derive MM equation and explain its significance with MM plot.   [06]
         b. Draw the plots of mixed inhibition.   [04]

<div align="center">OR</div>

Q4   a. Describe uncompetitive inhibition of enzymes. Derive LB equation in   [06]
             presence of uncompetitive inhibitor.
         b. Give drawbacks of MM plot. Explain its solution with any one plot.   [04]

Q5. Enlist various methods of enzyme immobilization. Explain adsorption and entrapment [10]
         methods in detail.

<div align="center">OR</div>

Q5   a. Describe the properties and types of material used for support in   [07]
             immobilization.
         b. Give the advantages and disadvantages of cross linking method of   [03]
             immobilization.

Q6. a. Discuss in detail the applications of enzymes in textile industry?   [06]
         b. Explain micelle, reverse micelle and liposomes with diagram.   [04]

<div align="center">OR</div>

Q6   a. Explain the use of enzymes in baking industry.   [05]
         b. Mention the applications of enzymes in leather industry.   [05]

<div align="center">X=x=x</div>

<div align="center">②</div>