[67/A-20] SEAT No._____ No of printed pages: 02

SARDAR PATEL UNIVERSITY

B.Sc VI SEMESTER EXAMINATION
FRIDAY, 29TH MARCH 2019
10:00 A.M. TO 1:00 P.M.
BIOTECHNOLOGY: US06CBIT03
ENZYMOLOGY

TOTAL MARKS: 70

Note:. Figures to the right indicates marks.

Q.1 Multiple Choice Questions **[10]**

1) The energy difference between the ground state and the transition state is called as_____ energy.
   a) Activation b) Potential
   c) Kinetics d) Thermal

2) Enzymes found in inactive form are known as_____.
   a) Holoenzymes b) Apoenzymes
   c) Zymogens d) Core enzymes

3) The Fischer's template theory of enzyme action is also called as_____.
   a) Induced fit theory b) Lock & Key theory
   c) Substrate strain theory d) Enzyme-coenzyme theory

4) A _____ is a substance which interferes with the substrate active site binding & slow down the catalytic rate.
   a) Inhibitor b) Inducer
   c) Enhancer d) Regulator

5) A _____ inhibitor of an enzyme is usually structurally similar to the substrate.
   a) Non competitive b) Un Competitive
   c) Competitive d) In competitive

6) _____ plot is drawn between the value of 1/V & 1/S.
   a) Lineweaver & Burk b) Eadie Hofstee
   c) Hannes-Woolf d) All of these

7) In industry immobilized enzymes is/are used for production of _____.
   a) Antibiotics b) Beverages
   c) Amino acids d) All of these

8) In which immobilization technique, the biomolecules are trapped within the gel matrix?
   a) Adsorption b) Entrapment
   c) Cross linking d) Covalent bonding

9) The starch is hydrolyzed by _____ enzyme.
   a) Protease b) Amylase
   c) Lipase d) Catalase

10) Degumming of silk by protease is used to improve _____ of silk material.
   a) Shining b) Texture
   c) Colour d) All of these

P.T.O

Q.II	**Answer the following questions in short. (Attempt any 10)**		**[20]**
a)	List out the general characteristics of enzymes.		
b)	Define the term enzyme inhibition.		
c)	What is coenzyme & cofactors?		
d)	Mention about steady state kinetics.		
e)	Draw double reciprocal plot with competitive inhibitor.		
f)	Define Substrate inhibition.		
g)	What is enzyme immobilization?		
h)	Give the advantages & disadvantages of immobilized enzymes.		
i)	Write about the support or matrix used in immobilization technology.		
j)	Give the application of lipase in detergent industry.		
k)	Write the uses of protease in food industry.		
l)	Give the different sources of protease.		
Q.III a)	Describe the classification of enzymes based on the reaction they catalyze.		**[07]**
b)	Give the salient features of active site of enzyme.		**[03]**

OR

Q.III a)	Explain in detail lock & key theory & induced fit theory of enzyme action.		**[06]**
b)	Write short note on allosteric enzyme.		**[04]**
Q.IV	Derive Michaelis and Menten (MM) equation. Explain in detail MM plot along with its significance & drawback.		**[10]**

OR

Q.IV	Describe uncompetitive inhibition of enzyme.		**[10]**
Q.V a)	Discuss in detail entrapment & covalent bonding method of immobilization		**[06]**
b)	Write the merits and demerits of adsorption & encapsulation method of immobilization.		**[04]**

OR

Q.V a)	Explain in detail applications of immobilized enzymes.		**[05]**
b)	Write short note on reverse miscelles.		**[05]**
Q.VI a)	Give the applications of different enzymes in pharmaceutical industry.		**[05]**
b)	Explain in detail applications of amylase in different industries.		**[05]**

OR

Q.VI a)	Describe the methods for production of enzyme commercially.		**[07]**
b)	Give the application of lipase in food & dairy industry.		**[03]**