

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2019
(First Semester)

Branch - BIOTECHNOLOGY

ENZYMOLOGY

Time: Three Hours-

Maximum: 75 Marks

SECTION-A (IQ Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

- 1 In lock and key hypothesis, substrate is the
 - (i) Key
 - (ii) Lock
 - (iii) Both A and B
 - (iv) Magenta molecule
- 2 Name the coenzyme of riboflavin (B2).
 - (i) NAD or NADP
 - (ii) FAD and FMN
 - (iii) Coenzyme . A
 - (iv) Thiaminepyrophosphate
- 3 What is the general mechanism of an enzyme?
 - (i) It acts by reducing the activation energy
 - (ii) It acts by increasing the activation energy
 - (iii) It acts by decreasing the pH
 - (iv) It acts by increasing pH
- 4 The enzyme lysozyme was discovered by Alexander Fleming during ____ .
 - (i) 1923
 - (ii) 1932
 - (iii) 1940
 - (iv) 1947
- 5 When the velocity of enzyme activity is plotted against substrate concentration, which of the is obtained.
 - (i) Hyperbolic curve
 - (ii) Parabola
 - (iii) Straight line with positive slope
 - (iv) Straight line with negative slope
- 6 The rate determining step of Michaelis - Menten kinetics is
 - (i) The complex dissociation step
 - (ii) The complex formation step
 - (iii) The product formation step
 - (iv) ES complex step
- 7 Which of the following is an example for irreversible inhibitor?
 - (i) Disulfiram
 - (ii) Oseltamivir
 - (iii) Proteaseinhibitors
 - (iv) DFP
- 8 In non-competitive inhibition extent of inhibition depends only on
 - (i) Concentration of enzyme
 - (ii) Concentrationof substrate
 - (iii) Concentration of inhibitor
 - (iv) Concentration of ES complex
- 9 The most commonly employed cross-linked polymer in enzyme immobilization is the
 - (i) PEG
 - (ii) Collagen
 - (iii) Cellulose
 - (iv) Resins
- 10 Which of the foll owing enzyme is used in meat tenderizing process
 - (i) Oxidase
 - (ii) Papain
 - (iii) Pepsin
 - (iv) Renin

Cont...

SECTION - B (25 Marks!

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 5 = 25)

- 11 a What is turnover number? Explain.
OR
b What he structure and functions of TPP.
- 12 a Explain the collision and transition theory of enzymatic reactions.
OR
b Write a note on the mechanism of carboxypeptidase A.
- 13 a Exemplify the types of kinetic reactions with examples.
OR
b Demonstrate LB and Hanes-wolf plot with its significance.
- 14 a What is feedback inhibition? Describe with an example.
OR
b Describe the sequential and concerted models of allosteric proteins.
- 15 a Explain artificial enzymes with examples.
OR
b Examine the uses of proteases in industry.

SECTION -C (40 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 8 = 40)

- 16 a Give an account on IUB classification of enzymes.
OR
b Write a note on the theories of enzyme action.
- 17 a Elaborate on the mechanism of action chymotrypsin.
OR
b Discuss the mechanism of acid base catalysis.
- 18 a Derive Michelies-Menton Equation with its importance in enzymatic reactions.
OR
b Demonstrate the effect of temperature and pH on enzyme activity.
- 19 a What is competitive enzyme inhibition? Explain with its example.
OR
b Illustrate multienzyme complex with an example.
- 20 a List out and explain the techniques of immobilized enzymes.
OR
b Explain the uses of enzymes in clinical diagnosis with examples.

Z-Z-Z**END**