22BTU102N / 22BTU102

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2023
(First Semester)
Branch - **BIOTECHNOLOGY**

ENZYMOLOGY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)
All Questions are Multiple Choice

Module No.	Question No.	Question	K Level	CO
1	1	Enzymes that catalyse the transfer of atom or group between 2 molecules is known as _____. i) Oxidoreductace ii) transferase iii) ligase iv) Isomerase	K1	CO1
	2	NAD stands for _____. i) Nicotinamide adenine dinucleotide ii) Nicotinamine adenine diphosphate iii) Nicotinamide adenine diphosphate iv) Nicotinamine adenine dinucleotide	K2	CO1
2	3	Optimum pH for enzyme trypsin is _____. i) 5.9 ii) 4.6 iii) 8.5 iv)7.0	K1	CO2
	4	Enzymes catalyse biochemical reaction by i) Lowering the activation energy ii) increasing activation energy iii) increasing the temperature iv) establishing bond between substrates	K2	CO2
3	5	Which of these is referred to as Kcat? i) Michaclis Menten constant ii) Catalytic effciency iii) substrate concentration iv) Turnover number	K1	CO3
	6	The reaction in which the reaction rate varies directly with the concentration of the reactant is _____ i) zero ii) first iii) second iv) None	K2	CO3
4	7	Enzymes are chemically _____. i) proteins ii) proteins and nucleic acid iii) proteins and ribonucleic acid iv) proteins and carbohydrates	K1	CO4
	8	In Competitive Inhibition i) Inhibitors resembles the substrate in molecular structures ii) competition between substrate and inhibitors to occupy active site iii) Binding of inhibitors at active site decline the enzyme action iv) All are correct	K2	CO4
5	9	Catalytic antibodies are called as _____. i) Ribozymes ii) abzymes iii) Extremozyme iv) lysozyme	K1	CO5
	10	Lactate dehydrogenase exists in ____forms i) 3 ii)4 iii) 5 iv) 2	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	State the properties of enzymes.	K2	CO1
		(OR)		
	11.b.	Describe in detail about metalloenzymes with examples.		
2	12.a.	Explain the covalent method of enzyme catalysis.	K3	CO2
		(OR)		
	12.b.	Sketch the graphical representation of activation energy.		
3	13.a.	Elaborate the enzyme catalysed reactions by Michaelis Menten equation.	K3	CO3
		(OR)		
	13.b.	Explain Enzyme kinetics using Lineweaver Burk plot		
4	14.a.	Explain Uncompetitive Inhibition with example.	K4	CO4
		(OR)		
	14.b.	Analyse feedback inhibition with an example.		
5	15.a.	Discuss about abzymes and State its applications.	K4	CO5
		(OR)		
	15.b.	Outline the industrial applications of amylase and protease enzymes.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Discuss in detail about enzyme specificity with appropriate examples.	K4	CO1
2	17	Elaborate the mechanism of action of chymotrypsin.	K4	CO2
3	18	Examine the factors that affect the rate of enzyme Catalysed reaction.	K4	CO3
4	19	State the kinetics of enzyme inhibition using appropriate equation.	K4	CO4
5	20	Categorise clinical enzymes used for diagnosis with examples.	K4	CO5

Z-Z-Z END