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25BCU207

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Second Semester)

Branch - **BIOCHEMISTRY**

ENZYMOLOGY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Find the model which explains the flexibility of the active site of an enzymes (i) Lock and Key Model (ii) Fluid Mosaic Model (iii) Induced Fit Model (iv) Operon Model	K1	CO1
	2	Which interaction stabilizes enzyme–substrate complex? (i) Covalent bonds (ii) Hydrogen bonds, ionic bonds (iii) Peptide bonds (iv) Disulfide bonds	K2	CO1
2	3	Allosteric enzymes usually show which type of kinetic curve? (i) Hyperbolic (ii) Sigmoidal (iii) Linear (iv) Parabolic	K1	CO2
	4	Which pair is correctly matched? (i) Thiamine — NAD^+ (ii) Niacin — TPP (iii) Biotin — CoA (iv) Riboflavin — FAD	K2	CO2
3	5	Chymotrypsin belongs to which type of protease? (i) Metalloprotease (ii) Cysteine protease (iii) Serine protease (iv) Aspartic protease	K1	CO3
	6	Mention the location whose Lactate dehydrogenase is abundant? (i) Bone tissue only (ii) Adipose tissue only (iii) Cartilage only (iv) Muscle and liver tissues	K2	CO3
4	7	Find the disease condition when amylase level is increased in serum (i) Pancreatitis (ii) Myocardial infarction (iii) Hepatitis (iv) Anemia	K1	CO4
	8	In baking, yeast produces enzyme that helps fermentation. (i) Catalase (ii) Zymase (iii) Urease (iv) Oxidase	K2	CO4
5	9	Which method is commonly used for enzyme immobilization? (i) Filtration (ii) Centrifugation (iii) Entrapment (iv) Distillation	K1	CO5
	10	Note the enzyme is commonly used in glucose biosensors (i) Amylase (ii) Glucose oxidase (iii) Lipase (iv) Protease	K2	CO5

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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.	Narrate the properties of enzymes.	K1	CO1
		(OR)		
	11.b.	Explain the units of enzyme activity.		
2	12.a.	Derive the Lineweaver-Burk plot.	K2	CO2
		(OR)		
	12.b.	Define the enzyme cooperativity. Mention the types of enzyme cooperativity.		
3	13.a.	Write about the acid base catalysis of enzymes.	K3	CO3
		(OR)		
	13.b.	Compare the types of reversible enzyme inhibitors.		
4	14.a.	Compile the factors that regulate enzyme level in blood.	K4	CO4
		(OR)		
	14.b.	Comment on enzyme pattern in Yoga.		
5	15.a.	Discuss the nature, nomenclature and action of abzymes.	K5	CO5
		(OR)		
	15.b.	Interpret the role of enzymes in bioremediation.		

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	Classify the enzymes according to the reaction catalysed.	K1	CO1
2	17	Sketch and explain the structure and functions of coenzyme A.	K2	CO2
3	18	Summarize the mechanism of action of Pyruvate Dehydrogenase Complex.	K3	CO3
4	19	Discuss the diagnostic importance of LDH and CK.	K4	CO4
5	20	Describe the significance of enzymes in biotechnology field.	K5	CO5

Z-Z-Z END