

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2026
(First Semester)
Branch - BIOTECHNOLOGY

ENZYMOLGY

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	Apoenzyme + cofactor forms (i) Prosthetic group (ii) Holoenzyme (iii) Isoenzyme (iv) Ribozyme	K1	CO1
	2	Turnover number refers to (i) Enzyme concentration (ii) Substrate concentration (iii) Enzyme inhibition (iv) No. of substrate molecules converted per unit time	K2	CO1
2	3	Transition state theory explains (i) Enzyme synthesis (ii) Reaction rate enhancement (iii) Enzyme inhibition (iv) Protein folding	K1	CO2
	4	Which is an example of serine protease? (i) Lysozyme (ii) RNase (iii) Catalase (iv) Trypsin	K2	CO2
3	5	Michaelis-Menten equation relates (i) Temperature & pressure (ii) Velocity & substrate concentration (iii) Enzyme & inhibitor (iv) pH & time	K1	CO3
	6	Lineweaver-Burk plot is (i) Linear plot of velocity vs time (ii) Double reciprocal plot (iii) Logarithmic plot (iv) Sigmoid curve	K2	CO3
4	7	Competitive inhibition occurs at (i) Allosteric site (ii) Cofactor site (iii) Membrane (iv) Active site	K1	CO4
	8	Feedback inhibition regulates (i) Protein synthesis (ii) Metabolic pathways (iii) DNA replication (iv) Transcription	K2	CO4
5	9	Immobilized enzymes are used in (i) Industrial processes (ii) DNA replication (iii) Photosynthesis (iv) Respiration	K1	CO5
	10	Ribozymes are (i) RNA with catalytic activity (ii) Protein enzyme (iii) Lipid enzymes (iv) Carbohydrate enzymes	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 classification of enzymes based on the type of reaction.	K1	CO1
		(OR)		
	11.b.	Recall the role of cofactors and coenzymes in enzyme function.		
2	12.a.	Extend the transition state theory to explain enzyme catalysis.	K2	CO2
		(OR)		
	12.b.	Interpret the mechanism of action of enzyme with example.		
3	13.a.	Apply Michaelis-Menten kinetics to determine enzyme activity.	K3	CO3
		(OR)		
	13.b.	Enlist the factors affecting enzyme kinetics.		
4	14.a.	Outline the concept and types of enzyme inhibition.	K4	CO4
		(OR)		
	14.b.	Analyze allosteric regulation and feedback inhibition.		
5	15.a.	Derive enzyme immobilization techniques and its application.	K4	CO5
		(OR)		
	15.b.	Evaluate the applications of enzymes in clinical diagnosis.		

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	Explain enzyme structure, cofactors, specificity, and enzyme activity units in detail.	K1	CO1
2	17	Summarize the enzyme catalysis mechanisms with examples.	K2	CO2
3	18	Assess the basic principles of enzyme kinetics.	K4	CO3
4	19	Examine the properties of multi enzyme complex with reference to FAS complex.	K4	CO4
5	20	Prioritize the enzymes derived through enzyme engineering and their applications.	K4	CO5

Z-Z-Z END