MSc DEGREE EXAMINATION MAY 2026
(First Semester)

Branch -**BIOCHEMISTRY**

ENZYMES AND ENZYME TECHNOLOGY

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	In which class the enzymes that catalyze the transfer of atom or group between two molecules are included? a) oxidoreductases b) transferases c) ligases d) isomerases	K1	CO5
	2	In a coupled enzyme assay, what is the role of the second enzyme? a) To inhibit the activity of the primary enzyme b) To consume the product of the primary enzyme c) To produce a detectable signal in response to the primary enzyme's activity d) To stop the primary reaction from proceeding	K1	CO1
2	3	A deficiency in thiamine pyrophosphate can lead to the accumulation of which metabolic intermediate? a) Acetyl-CoA b) Pyruvate c) Citrate d) Oxaloacetate	K1	CO5
	4	Infer is the main substrate that GPx uses to reduce hydroperoxides. a) Hydrogen peroxide (H_2O_2) b) Oxidized glutathione (GSSG) c) Reduced glutathione (GSH) d) Ascorbic acid (AsA)	K2	CO1
3	5	Spell the rate determining step of Michaelis-Menten kinetics ___ a) The complex dissociation step to produce products b) The complex formation step c) The product formation step d) None of the mentioned	K1	CO5
	6	Inhibition of invertase by sucrose falls into which category of inhibition? a) Substrate inhibition b) Non-competitive inhibition c) Product inhibition d) Competitive inhibition	K1	CO1
4	7	Name the enzymes having allosteric sites, other than catalytic site which is used for binding for regulatory metabolites _____ a) isoenzyme b) biosensor c) allosteric enzymes d) effectors	K1	CO5
	8	Infer on the common source of lysozyme, used for its antibacterial properties a) Chicken egg white b) Liver cells c) Potato tubers d) Human hair follicles	K2	CO1

Cont...

5	9	oxidase (GOx) to measure blood glucose levels by detecting: a) Penicillin b) Oxygen consumption or hydrogen peroxide production c) Cocaine levels d) Urea	K1	CO5
	10	CK-MB and CK-BB are examples of what type of enzymes? a) Isoenzymes b) Heterogeneous enzymes c) Homogeneous enzymes d) Allosteric enzymes	K1	CO1

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.	List the features of Enzyme modification using chemicals and proteases.	K1	CO5
		(OR)		
	11.b.	Show the Coupled enzyme assay in detail.		
2	12.a.	Identify how biotin acts as a coenzyme in biochemical reactions.	K3	CO1
		(OR)		
	12.b.	Organize the features of TPP as coenzymes in enzyme reactions.		
3	13.a.	Make use of the Eadie Hofstee plot, Hanes Plot with respect to ES complex.	K3	CO2
		(OR)		
	13.b.	Construct the kinetics involved in two substrate reactions.		
4	14.a.	Examine the Feedback regulation in detail.	K4	CO4
		(OR)		
	14.b.	Analyse the Mechanism of action of Ribonuclease.		
5	15.a.	Contrast the molecular docking. process in enzyme research.	K4	CO3
		(OR)		
	15.b.	Examine the Artificial enzymes elaborately.		

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	Recall the various Multienzyme complexes in detail.	K1	CO1
2	17	Organize in detail about the Antioxidant enzymes.	K3	CO5
3	18	Solve MM equation in detail.	K3	CO2
4	19	Assess how ATPase acts as a Allosteric regulator?	K5	CO4
5	20	Explain how enzymes are used in medical field.	K5	CO3

Z-Z-Z END