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Daffodil International University

Department of Genetic Engineering and Biotechnology
Faculty of Health and Life Sciences
B. Sc. (Hons.) in Genetic Engineering and Biotechnology
Final Examination Spring 2026

Course Code: 0512-1307
Level and Term: L1, T3
Time: 2 Hours

Section: 252 (A+B)

Course Title: Enzymology
Course Teacher Initials: DNH & MAR
Total Marks: 40

				Marks
1	(a)	What is meant by enzyme inhibition. What are the differences between reversible and irreversible enzyme inhibition.	[CLO1, PLO1, C1]	3
	(b)	Briefly describe non-competitive inhibition with its enzyme kinetics and suitable examples.	[CLO1, PLO2, C1]	3
	(c)	Discuss the importance and applications of enzyme inhibition in biological systems.	[CLO2, PLO2, C2]	2
2	(a)	Define enzyme specificity. Explain absolute specificity and linkage specificity with suitable examples.	[CLO1, PLO2, C2]	4
	(b)	Describe how enzymes distinguish between stereoisomers with suitable examples and diagram.	[CLO1, PLO2, C2]	2
	(c)	Analyze the importance of enzyme specificity in biological systems.	[CLO2, PLO2, C2]	2
3	(a)	Define an allosteric enzyme. State the key properties of allosteric enzymes.	[CLO2, PLO1, C2]	3
	(b)	What is effector molecule? Describe the Monod-Wyman-Changeux (MWC) model of enzyme cooperativity.	[CLO2, PLO2, C2]	5
4	(a)	Explain covalent modification of enzymes using the Pyruvate Dehydrogenase (PDH) complex as an example.	[CLO2, PLO1, C2]	3
	(b)	What is chymotrypsin? Briefly describe its catalytic mechanism. Write the applications of a chymotrypsin.	[CLO2, PLO1, C6]	5
5	(a)	Explain the mode of action of RNase A in catalyzing RNA cleavage.	[CLO2, PLO1, C2]	4
	(b)	State the biological significance of RNase A in cellular RNA turnover and host defense.	[CLO3, PLO3, C3]	2
	(c)	Discuss the applications of lysozyme in various industries.	[CLO2, PLO2, C2]	2