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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 Fall 2025

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

Section: 251 (A+B)

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

Splitting any answer is strictly prohibited

				Marks
1	(a)	What is enzyme inhibition? Classify the main types of enzyme inhibition.	[CLO2, PLO2, C2]	3
	(b)	Explain competitive, non-competitive and uncompetitive enzyme inhibition.	[CLO2, PLO2, C5]	3
	(c)	List the applications of enzyme inhibition.	[CLO3, PLO1, C4]	2
2	(a)	What is enzyme specificity? Briefly discuss the absolute specificity and stereospecificity of enzymes.	[CLO1, PLO1, C6]	5
	(b)	Describe the biological and industrial importance of enzyme specificity.	[CLO3, PLO1, C6]	3
3	(a)	Explain in detail the catalytic mechanism of chymotrypsin.	[CLO1, PLO1, C2]	4
	(b)	What is lysozyme? State its biological significance.	[CLO1, PLO2, C1]	2
	(c)	Describe the applications of Ribonuclease A?	[CLO3, PLO2, C1	2
4	(a)	Define allosteric enzymes and enlist their key characteristics.	[CLO2, PLO1, C4]	3
	(b)	Briefly describe the Koshland-Nemethy-Filmer (KNF) model of allosteric cooperativity.	[CLO2, PLO2, C6]	5
5	(a)	Explain the cooperativity of oxygen binding in hemoglobin.	[CLO2, PLO2, C2]	4
	(b)	What is covalent modification of enzymes? Briefly describe covalent modification in glycogen phosphorylase and pyruvate dehydrogenase.	[CLO2, PLO2, C1]	4