



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