



Department of Genetic Engineering and Biotechnology
Faculty of Health and Life Sciences
B. Sc. (Hons.) in Genetic Engineering and Biotechnology
Midterm Examination Fall 2025

Course Title: Basic Biochemistry

Course Teacher Initials: MZA and DMI

Total Marks: 25

Course Code: 0512-1301
Level and Term: L-1, T-1
Time: 1 hour 30 minutes

Section: 251(A+B)

Splitting any answer is strictly prohibited

			Marks
1	(a) Define and classify lipids with examples.	[CLO2, PLO2, C1]	3
	(b) Enumerate the biological functions of lipids in living organisms.	[CLO1, PLO1, C2]	2
2	(a) Draw ring structure of glucose and linear structure of fructose	[CLO3, PLO7, C3]	3
	(b) Define reducing and non-reducing sugars, citing suitable examples.	[CLO3, PLO7, C2]	2
3	(a) Present a schematic classification chart of carbohydrates with examples.	[CLO2, PLO2, C6]	3
	(b) Discuss the biological importance and physiological functions of carbohydrates.	[CLO1, PLO1, C2]	2
4	(a) Explain the concept of buffer and illustrate its mechanism of action in maintaining pH stability.	[CLO1, PLO1, C3]	3
	(b) What is dissociation constant? Write the full Henderson-Hasselbalch equation for "Basic" buffer system.	[CLO3, PLO7, C3]	2
5	(a) Discuss 3 chemical properties of water.	[CLO1, PLO1, C4]	3
	(b) Calculate the pH values of 0.3 M and 0.8 M HCl solutions.	[CLO3, PLO7, C3]	2