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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
Midterm Examination Fall 2025

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

Section: 251(A+B)

Course Title: Basic Biochemistry
Course Teacher Initials: MZA and DMI
Total Marks: 25

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