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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 Spring 2026

Course Code: 0512- 2107
Level and Term: L-2, T-1
Time: 1 Hour 30 Minutes

Section: 252 (A+B)

Course Title: Metabolism
Course Teacher Initials: DMI
Total Marks: 25

Answer the following questions:

				Marks
1	(a)	Define the terms metabolism, catabolism, and anabolism.	[CLO1, PLO1, C1]	2.0
	(b)	Briefly discuss the metabolic and energy transfer pathways involved in metabolism.	[CLO1, PLO1, C6]	3.0
2		Draw and explain the tricarboxylic acid cycle (TCA) pathway step by step mentioning the intermediates products, enzymes, and energy changes.	[CLO2, PLO2, C5]	5.0
3	(a)	Compare between aerobic and anerobic fate of pyruvate.	CLO2, PLO2, C4]	2.5
	(b)	Illustrate the diagram of glycolysis pathway showing all intermediates products, enzymes, and energy-yielding steps.	[CLO2, PLO2, C2]	2.5
4	(a)	What is meant by lipid metabolisms? Draw the pathway involved in the degradation of triglycerides.	[CLO2, PLO2, C1]	2.0
	(b)	Discuss the stepwise process involved in the β-oxidation of fatty acids, highlighting the intermediate products and key enzymes.	[CLO2, PLO2, C6]	3.0
5	(a)	What is protein metabolism? Briefly discuss the significance of protein metabolism.	[CLO2, PLO2, C1]	3.0
	(b)	Explain the process of amino acid decarboxylation involved in protein metabolism.	[CLO2, PLO2, C2]	2.0