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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 Spring 2026

Course Code: 0512-2101 **Course Title:** Molecular Biology
Level and Term: L2, T1 **Section: 251 (A+B)** **Course Teacher Initials:** SBN & AR
Time: 2 hours **Total Marks:** 40

			Marks
1.	a)	What is ribosome? Describe the various components of ribosome.	[CLO1, PLO1, C1]	3.0
	b)	Briefly describe the various steps of translation.	[CLO2, PLO1, C4]	5.0
2.	a)	Describe the mutations resulting from tautomeric shift.	[CLO1, PLO2, C2]	4.5
	b)	Discuss the molecular mechanism of frameshift mutation.	[CLO1, PLO1, C5]	3.5
3.	a)	Define base analog. Describe the mutation occurred by 5-brouracil.	[CLO2, PLO2, C4]	3.5
	b)	What is DNA repair system? Explain the photoreactivation process of DNA repair.	[CLO1, PLO1, C1]	4.5
4.	a)	Diagrammatically show the controlling points of gene regulation.	[CLO1, PLO1, C6]	3.5
	b)	Describe the structure and mechanism of *Lac* operon in bacteria.	[CLO2, PLO2, C2]	4.5
5.	a)	What is organelle genome? Write the structural features of mtDNA.	[CLO1, PLO1, C3]	4.0
	b)	Describe dual control of organelles functions with diagram.	[CLO1, PLO1, C4]	4.0