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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 Summer 2026

Course Code: 0512-1203
Level and Term: L1, T2
Time: 2 Hours
Section: 261 (A)
Course Title: Basic Microbiology
Course Teacher Initials: DNH
Total Marks: 40

				Marks
1	(a)	What is binary fission? Describe the process of binary fission in bacteria.	[CLO1, PLO2, C1]	5
	(b)	Explain the importance of bacteria with reference to their environmental roles, contributions to human health, and industrial applications.	[CLO1, PLO2, C1]	3
2	(a)	What is a culture medium? State the basic requirements of a suitable culture medium for the growth of microorganisms.	[CLO1, PLO1, C5]	2
	(b)	Classify culture media based on their functions and describe the different types with suitable examples.	[CLO2, PLO1, C4]	4
	(c)	Briefly describe the techniques used to preserve microbial cultures.		2
3	(a)	Define sterilization. List the key factors that affect the efficacy of sterilization.	[CLO2, PLO1, C2]	2
	(b)	Describe the different physical methods of sterilization with suitable examples.	[CLO1, PLO2, C1]	4
	(c)	Explain the mechanism of the antimicrobial agents on microorganisms.		2
4	(a)	Explain enrichment and selective media with suitable examples.	[CLO1, PLO1, C1]	2
	(b)	Diagrammatically illustrate the pour plate and spread plate methods of microbial culture.	[CLO1, PLO2, C6]	2
	(c)	What is the IMViC test? Explain the principle and significance of the four tests included in IMViC.		4
5	(a)	What is microbial ecology? Explain the major biotic and abiotic factors that influence the growth and distribution of microorganisms.	[CLO2, PLO2, C2]	3
	(b)	Briefly describe the different types of microbial interactions with suitable examples.	[CLO2, PLO2, C6]	5