



Department of Genetic Engineering and Biotechnology
Faculty of Health and Life Sciences
B. Sc. (Hons.) in Genetic Engineering and Biotechnology
Midterm Examination Summer 2026

Course Code: 0512-1207
Level and Term: L-1, T-2
Time: 1 Hour 30 Minutes

Section: 261A

Course Title: Microbial Genetics
Course Teacher Initials: DMI
Total Marks: 25

Answer the following questions:

			Marks
1	(a) Explain the scope of microbial genetics and its applications [CLO1, PLO1, C2] in biotechnology.		2.0
	(b) Discuss the process involved in the bacterial DNA replication with a diagram. [CLO1, PLO1, C6]		3.0
2	(a) Define the plasmid. Draw and explain the structure of a plasmid. [CLO2, PLO2, C1]		3.0
	(b) Briefly describe the importance and applications of plasmids in biotechnology [CLO2, PLO2, C6]		2.0
3	(a) Explain the mechanisms and causes underlying antibiotic resistance in bacteria. [CLO2, PLO2, C2]		3.0
	(b) Briefly discuss the types of plasmids based on function. [CLO2, PLO2, C6]		2.0
4	(a) Differentiate between conjugation and transformation as mechanisms of horizontal gene transfer in bacteria. [CLO3, PLO7, C2]		2.0
	(b) Elaborate the process of conjugation as a mode of genetic transfer in bacteria with a diagram. [CLO3, PLO7, C6]		3.0
5	(a) Write the types of transformation of foreign genetic material. [CLO4, PLO3, C1]		1.0
	(b) Describe the steps of artificial transformation process with diagram. [CLO4, PLO3, C6]		4.0