



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: 0512-1207

Level and Term: L-1, T-2

Time: 1 Hour 30 Minutes

Section: 253 (A+B)

Course Title: Microbial Genetics

Course Teacher Initials: DMI

Total Marks: 25

- | | | Marks |
|---|---|-------|
| 1 | (a) Explain the structure of a bacterium with a labeled diagram. [CLO1, PLO1, C2] | 2.0 |
| | (b) Discuss the initiation and elongation stages of bacterial DNA replication. [CLO1, PLO1, C6] | 3.0 |
| 2 | (a) Draw and explain the structure of a virus. [CLO1, PLO1, C2] | 2.0 |
| | (b) Discuss the mechanism of replication in viruses. [CLO1, PLO1, C6] | 3.0 |
| 3 | (a) State the term ColE1 plasmid. Explain the types of plasmids with examples. [CLO2, PLO2, C2] | 3.0 |
| | (b) How do bacteria develop resistance to antibiotics? [CLO2, PLO2, C6] | 2.0 |
| 4 | (a) Draw a diagram showing the structure of a plasmid. [CLO2, PLO2, C3] | 2.0 |
| | (b) Elaborate the process of bacterial conjugation with a diagram. [CLO3, PLO7, C6] | 3.0 |
| 5 | (a) Describe the mechanism of bacterial transduction process. [CLO5, PLO5, C2] | 3.0 |
| | (b) Differentiate between transformation and transduction. [CLO5, PLO5, C4] | 2.0 |