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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- 1101

**Course Title:** Introduction to Genetic Engineering and Biotechnology

**Level and Term:** L-1, T-1

**Section:** 261 A

**Course Teacher Initials:** MAR

**Time:** 1 Hour 30 Minutes

Total Marks: 25

| | | | | Marks |
|---|---|---|---|---|
| 1 | (a) | Define Biotechnology according to the European Federation of Biotechnology (EFB). | [CLO1, PLO2, C1] | 2 |
| | (b) | Distinguish between "Traditional Biotechnology" and "Modern Biotechnology" | [CLO1, PLO2, C4] | 3 |
| 2 | (a) | Name four sources from which a researcher can get a "Target Gene" for cloning | [CLO2, PLO3, C1] | 2.5 |
| | (b) | Describe two essential parts of a DNA vector | [CLO2, PLO4, C1] | 2.5 |
| 3 | (a) | Explain the roles of restriction enzymes and DNA ligase in the "Cut and Paste" steps of cloning. | [CLO2, PLO4, C5] | 2.5 |
| | (b) | Outline the steps transformation and selection in the cloning workflow. | [CLO2, PLO4, C2] | 2.5 |
| 4 | (a) | Describe how biotechnology is used to produce human peptide hormone Somatostatin. | [CLO3, PLO1, C2] | 2.5 |
| | (b) | Identify any three medical products that can be produced using biotechnological methods. | [CLO3, PLO1, C3] | 2.5 |
| 5 | (a) | Compare between conjugation and lipofection. | [CLO2, PLO10, C4] | 2 |
| | (b) | Design a simple experiment to prove that a bacterial cell has successfully taken up a recombinant plasmid using an antibiotic resistance marker. | [CLO2, PLO10, C6] | 3 |