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 Fall 2025

**Course Code:** 0512-1301
**Level and Term:** L-1, T-3
**Time:** 2 Hours

**Section: 251 (A+B)**

**Course Title:** Basic Biochemistry
**Course Teacher Initials:** DMI & AR
**Total Marks:** 40

**Splitting any answer is strictly prohibited**

| | | | Marks |
|---|---|---|---|
| 1 | (a) | Explain the concept of amino acids and classify amino acids. [CLO2, PLO2, C2] | 3.0 |
| | (b) | Illustrate the structure of three essential amino acids and three basic amino acids. [CLO2, PLO2, C2] | 3.0 |
| | (c) | Discuss briefly the physical properties of amino acids. [CLO2, PLO2, C6] | 2.0 |
| 2 | (a) | State the term proteins. Elaborate the structure of proteins. [CLO2, PLO2, C2] | 4.0 |
| | (b) | Discuss the N-terminus identification by Edman Degradation method. [CLO2, PLO2, C6] | 4.0 |
| 3 | (a) | Distinguish between the nucleoside and nucleotide. State the physiochemical properties of nucleic acids. [CLO2, PLO2, C4] | 4.0 |
| | (b) | Discuss the double helical structure of DNA. [CLO2, PLO2, C6] | 4.0 |
| 4 | (a) | What is RNA? Explain the different types of RNA. [CLO2, PLO2, C1] | 3.5 |
| | (b) | Elaborate the functions of RNA. Explain the Denaturation and renaturation of nucleic acids. [CLO2, PLO2, C4] | 4.5 |
| 5 | (a) | Define the term vitamins. Elaborate the Functions and importance of vitamins. [CLO4, PLO2, C6] | 4.0 |
| | (b) | Classify hormones based on chemical structure. Explain how hormones work in the human body. [CLO4, PLO2, C2] | 4.0 |