



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: 0512-1101

Level and Term: L-1, T-1
Time: 02 Hours

Section: 253 (A+B)

Course Title: Introduction to Genetic Engineering and Biotechnology
Course Teacher Initials: KMH
Total Marks: 40

Splitting any answer is strictly prohibited

- | | Marks |
|---|-------|
| 1. (a) Define gene therapy. List the different methods of gene transfer used in biotechnology & molecular biology, and briefly discuss any three suitable methods. [CLO1, PLO2, C4] | 4.0 |
| (b) Define a transgenic organism and cite suitable examples. [CLO1, PLO2, C6]
Elaborate the process involved in the creation of a transgenic organism. | 4.0 |
| 2. (a) Explain the methods involved in the <u>synthetic production</u> of human peptide hormones. Cite examples of recombinant peptide hormones. [CLO2, PLO2, C2] | 4.0 |
| (b) Discuss the steps involved in the recombinant DNA-based production of insulin. Why is synthetic insulin required? [CLO2, PLO2, C6] | 4.0 |
| 3. (a) Define interferons and classify them with suitable examples. State the methods used for the production of interferons. [CLO2, PLO2, C1] | 4.0 |
| (b) What is Golden Rice? Elucidate the key biotechnological methods used in crop production. [CLO3, PLO2, C4] | 4.0 |
| 4. (a) List alcoholic and non-alcoholic beverages. State the <u>applications of biotechnology in the production</u> of non-alcoholic beverages. [CLO3, PLO2, C4] | 4.0 |
| (b) Demonstrate the applications of biotechnology in fish and meat production. [CLO3, PLO2, C2] | 4.0 |
| 5. (a) Define vaccines and classify them, <u>mentioning suitable examples and advantages</u> . [CLO3, PLO2, C1] | 4.0 |
| (b) What do you mean by blood products? Briefly discuss any three suitable steps involved in the production of blood products. [CLO3, PLO2, C4] | 4.0 |

Ariful