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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
Final Examination Fall 2025

Course Code: 0512-1101 **Course Title:** Introduction to Genetic Engineering and Biotechnology

Level and Term: L-1, T-1 **Section: 253 (A+B)** **Course Teacher Initials: KMH**

Time: 02 Hours **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. Elaborate the process involved in the creation of a transgenic organism. [CLO1, PLO2, C6]	4.0
2. (a)	Explain the methods involved in the synthetic production 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 applications of biotechnology in the production 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, mentioning suitable examples and advantages. [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