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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 Spring 2026

Course Code: 0231-111
Level and Term: L-1; T-1
Time: 02 Hours

Section: 261A

Course Title: Communicative English
Course Teacher Initials: SML
Total Marks: 40

		Marks
1	Read the passage carefully and answer the questions below: [CLO2, PLO1, C3]	12.0

Gene editing and the ethical frontier of biotechnology

In recent decades, advances in biotechnology have revolutionized our understanding of life at the molecular level. Among these innovations, gene editing technologies particularly CRISPR-Cas9 have emerged as powerful tools that allow scientists to modify genetic material with unprecedented precision. This capability has opened new possibilities in medicine, agriculture, and environmental science. However, it has also raised profound ethical and societal questions that remain unresolved.

One of the most promising applications of gene editing lies in the treatment of genetic disorders. Diseases caused by single-gene mutations, such as cystic fibrosis and sickle cell anemia, may potentially be corrected at their source. Unlike traditional therapies, which often focus on managing symptoms, gene editing offers the possibility of permanent cures. Nevertheless, the long-term effects of such interventions are still uncertain, particularly when changes are introduced into germline cells, which can pass modifications on to future generations.

In agriculture, gene editing has enabled the development of crops that are more resistant to pests, diseases, and environmental stress. These innovations could play a crucial role in addressing global food security challenges, especially in regions vulnerable to climate change. However, critics argue that the widespread adoption of genetically modified organisms (GMOs) may disrupt ecosystems and reduce biodiversity. There are also concerns about the monopolization of biotechnology by large corporations, which could limit access for small-scale farmers.

Beyond practical applications, gene editing raises fundamental ethical dilemmas. The possibility of "designer babies," where genetic traits such as intelligence or physical appearance are selected, has sparked intense debate. While some view this as an extension of human progress, others warn that it could exacerbate social inequalities and lead to

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new forms of discrimination. The distinction between therapeutic and enhancement-based interventions is often blurred, making regulation particularly challenging.
International efforts to establish ethical guidelines for gene editing are ongoing, but consensus remains elusive. Different countries have adopted varying regulatory frameworks, reflecting diverse cultural, religious, and political perspectives. As the technology continues to evolve, it is imperative for scientists, policymakers, and society at large to engage in informed dialogue. Only through careful consideration of both the benefits and risks can the full potential of gene editing be realized responsibly.

A. Find whether the statements are True / False / Not Given **4×1=4**

i.CRISPR-Cas9 is the only gene-editing technology currently in use.
ii. Gene editing can potentially provide permanent solutions to some genetic diseases.
iii. All countries have agreed on a unified regulation for gene editing.
iv. GMOs are universally accepted as safe and beneficial.

B. Multiple Choice Questions **4×1=4**

i. What is the main purpose of the passage?
a) To explain laboratory techniques in detail
b) To discuss the benefits and ethical concerns of gene editing
c) To criticize modern agriculture
d) To describe the history of biotechnology
ii. What does the word "unprecedented" most nearly mean?
a) Unimportant b) Never done before
c) Temporary d) Limited
iii. Which of the following is a concern related to GMOs?
a) Increased biodiversity b) Ecosystem disruption
c) Reduced crop yield d) Lack of scientific interest
iv. What can be inferred about gene editing regulation?
a) It is uniform worldwide b) It is unnecessary
c) It varies across countries d) It is strictly controlled everywhere

C. Short Answer Questions: **4×1=4**
i. How can gene editing help treat genetic diseases?
ii. Why is germline editing controversial?
iii. How can gene editing contribute to food security?
iv. What ethical issue is associated with "designer babies"?

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2 (a) **Fill in the blanks with the Right Form of Verbs** [CLO1, PLO1, C3] 5.0

i. Scientists _____ (develop) new gene-editing tools over the past decade.
ii. The researcher _____ (conduct) the experiment when the equipment failed.
iii. If the mutation _____ (detect) earlier, the disease could have been prevented.
iv. CRISPR _____ (allow) precise modification of DNA sequences.
v. The team _____ (analyze) the data before publishing the results.
vi. By next year, they _____ (complete) the genome sequencing project.
vii. The cells _____ (divide) rapidly under controlled conditions.
viii. She _____ (work) in the laboratory since morning.
ix. If scientists _____ (ignore) ethical concerns, serious consequences may arise.
x. The experiment made the students _____ (understand) the concept clearly.

(b) **Fill in the blanks with the most Appropriate Prepositions** [CLO1, PLO1, C3] 5.0

i. The research focuses _____ gene expression.
ii. Scientists are working _____ developing vaccines.
iii. The results depend _____ accurate data collection.
iv. He is an expert _____ molecular biology.
v. The study deals _____ genetic mutations.
vi. She is responsible _____ conducting the experiment.
vii. The theory is based _____ previous research findings.
viii. They succeeded _____ isolating the gene.
ix. The experiment resulted _____ unexpected outcomes.
x. The scientist is proud _____ her groundbreaking discovery.

3 Write a formal application to the Dean of the Faculty requesting permission to: [CLO3, PLO1, C6] 8

Establish a Biotechnology Research Club in your department mentioning purpose of the club, benefits for the students and proposed activities.

4 Write a paragraph on: [CLO3, PLO1, C6] 10

"Why I Chose Genetic Engineering and Biotechnology as My Field of Study"