

**GUJARAT NATIONAL LAW UNIVERSITY  
GANDHINAGAR**

Course: **Biotechnology and Bioinformatics**  
Semester- II (Batch: 2022-27)

**End Semester Examination: May 2023**

**Date: 12<sup>th</sup> May, 2023**

**Duration: 2 hours**

**Max. Marks: 40**

**Instructions:**

- Read the questions properly and write the answers in the given answer book.
- Do not write anything on the question paper.
- The respective marks for each question are indicated in-line.
- Indicate correct question numbers in front of the answer.
- Draw diagrams only with pencil.
- No questions or clarification can be sought during the exam period, answer as it is, giving reason, if any.
- Word Limit: 6 Marks: 250-300 words, 2 Marks: 50-60 words.

**Part: A**

- |   | <b>Marks</b> |
|---|--------------|
| Q.1 Write short note on <b>any five</b> of the following: | (2x5=<br>10) |
| a) Roundup-ready plants                                   |              |
| b) Somaclonal variation                                   |              |
| c) Proteomics   |              |
| d) Golden rice  |              |
| e) Posilac  |              |
| f) CRISPR-Cas 9   |              |

**Part: B**

Answer **any five** of the following questions:

- |   |     |
|---|-----|
| Q.2 Discuss the various Online databases available for human-inherited disease-associated mutations.  | (6) |
| Q.3 Briefly discuss the steps involved in the cryopreservation of germplasm.  | (6) |
| Q.4 What is GURTS Technology? Explain the mechanism of action of the terminator gene with inducer and without inducer.  | (6) |
| Q.5 Describe bioremediation with examples.  | (6) |
| Q.6 What are embryonic stem cells? What are its characteristic properties? Briefly discuss the ethical concerns with respect to the embryonic stem cell research. | (6) |
| Q.7 Briefly discuss the potential applications and challenges of xenotransplantation.   | (6) |

\*\*\*\*