Registration Number:

Date & Session: 16-12-2022; 9 am

**ST JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**M.Sc. BIOTECHNOLOGY - III SEMESTER**

**SEMESTER EXAMINATION: OCTOBER 2022**

**(Examination conducted in December 2022)**

**BTOE9522: TRANSGENIC ORGANISMS AND BIOETHICS**

**Time-1 ½ hrs Max Marks-35**

**This question paper contains ONE printed page and TWO parts**

**I. Answer *ANY TEN* questions 1m x 10 = 10 marks**

1. Define ‘Genome’. What is the size of the human genome?
2. Name any two techniques used for genetic transformation of plants.
3. Name any reagent used in isolation of genomic DNA and mention its function.
4. Name any two countries that are the biggest GMO crop adopters globally.
5. What is ‘Roundup ready’ soyabean?
6. Write a brief note about the regulatory mechanism in place in India for approval of GM crops.
7. Mention any two factors that influence the adoption of Agri Biotech in many countries.
8. Write a note about the Green Revolution.
9. What is Rainbow Papaya?
10. What is the ‘scientific method’?
11. How is climate change affecting agriculture?
12. Which is the crop plant that the GEAC under the Union Ministry of Environment, Forest and Climate Change, India approved for commercial use in October 2022?

**II. Answer *ANY FIVE* questions 5m x 5 = 25 marks**

1. What are the major challenges to agriculture today? Add a brief note about food security.
2. What is Bt cotton? In your opinion, has Bt cotton in India been a success or failure?
3. Write a brief note on Agarose gel electrophoresis.
4. What is pseudoscience? What are some practical ways in which you can spot pseudoscientific claims?
5. Consider the whiffy wheat case we discussed in class. Briefly describe what the objective behind creation of whiffy wheat was and the final outcome of the study. What specific aspect of the scientific method does this example indicate?
6. Describe the major broad categories of scientific misconduct in research.