

# Question Paper

Exam Date & Time: 20-Jun-2024 (02:30 PM - 05:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

VI SEMESTER B.TECH END SEMESTER -MAKE UP EXAMINATIONS, JUNE 2024

**ANIMAL PLANT BIOTECHNOLOGY AND BIOETHICS [BIO 3251]**

**Marks: 50**

**Duration: 180 mins.**

**A**

**Answer all the questions.**

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

- 1) Explain four salient features of plant genomes (4)
  - A)
  - B) Explain the paradoxes of plant genomes (3)
  - C) Briefly explain applications of chloroplast biotechnology (3)
- 2) Explain the method of Micropropagation (4)
  - A)
  - B) Develop a flow chart to explain sterilization (3)
  - C) Construct a typical growth curve of plant cell suspension culture (3)
- 3) Explain four important plant transformation methods (5)
  - A)
  - B) Discuss different types of Biosafety cabinets (3)
  - C) Name any two endogenous or exogenous fluorophores (2)
- 4) Compare adherent and suspension cells (5)
  - A)
  - B) Develop a flow chart for sub-culturing of adherent cells (3)
  - C) Name any two cryoprotectants (2)
- 5) Discuss Trade marks, copyright and Plant breeder's right (5)
  - A)
  - B) Explain direct and indirect method of measuring cell density (3)
  - C) Give an example for trade secret (2)