

2125

B.E. (Bio-Technology) Seventh Semester
BIO-713: Plant Tissue Culture

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

1. Answer the following:

- a) What is the role of explants in Plant Tissue culture?
- b) Explain the technique of Flame Sterilization.
- c) What is the need of sterilization of media before inoculation?
- d) What is the role of an osmoticum in protoplast isolation?
- e) Define the term Callus.
- f) How are recognition sites useful in rDNA technology?
- g) How does Electroporation help in gene transfer?
- h) What is the use of Cryoprotectants?
- i) Which gene is used to develop resistance against Glyphosate?
- j) What is the use of Anther Culture?

(1x10)

UNIT - I

2. Explain the composition and basic technique of nutrient preparation. (10)
3. Give the process, scope and applications of Haploid Production. (10)
4. Describe the process of protoplast isolation and culture highlighting its application. (10)

UNIT - II

5. Explain the various *Agrobacterium* - mediated transformation methods and give their application (10)
6. Discuss the potential of using Plant Tissue Culture for production of Secondary metabolites with suitable examples (10)
7. Highlight the scope of Germplasm storage and explain various techniques used for short term storage. (10)

x-x-x