

**Sr.No.14093**

**Exam Code: 210004**

**Subject Code: 4578**

**M.Sc. Botany - 4th Semester**

**(2720)**

**Paper - BOTC-623**

**Plant Tissue Culture & Biotechnology**

**Time allowed: 2 hrs.**

**Max. Marks: 50**

**Note: Attempt any four questions. All questions are of equal marks.**

1. Write notes on any two of the following (6 marks each)
  - a. Differentiation in cell and tissue culture
  - b. Somatic embryogenesis
  - c. Shoot tip culture
2. What do you understand by Micropropagation? Discuss its different stages, advantages and disadvantages.
3. What do you understand by somaclonal variations? Give an account of use of this technique for isolation of mutants at cellular level for disease resistance.
4. What are "Synthetic seeds"? Give a detailed account of their production and uses.
5. What do you understand by "Transgenesis"? Discuss in detail different methods widely used for Vectorless Transgenesis.
6. Give an account of cell culture method for the production of secondary metabolites
7. What is Freeze Preservation Technology? Discuss its role in Plant Cell Culture.
8. Write notes on any two of the following (6 marks each)
  - a. Terminator technology
  - b. Role of Plant Tissue Culture in Human Welfare
  - c. Prospects of Genetic Engineering in plants

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