

2112
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

I. Write short note on the following:-

- a) Totipotency
- b) Somatic embryo
- c) Meristem Culture
- d) Haploids
- e) Auxins
- f) Gelling agent
- g) Ti plasmid
- h) Cryopreservation
- i) Hairy Root Culture
- j) Golden Rice

(10x1)

UNIT - I

- II. Describe the important components of a standard tissue culture media and explain the importance of each with respect to its influence on the morphogenetic responses in culture. (10)
- III. Give a detailed account of Protoplast isolation and culture. How is this techniques useful in somatic hybridization (10)
- IV. Discuss the technique of haploid production. How is this utilized for crop improvement? (10)

UNIT - II

- V. Describe the various techniques of *in vitro* pollination and fertilization. (10)

P.T.O.

(2)

- VI. Explain the methods of direct and indirect way of gene transfer. Give its applications. (10)
- VII. What is germplasm storage? Describe the techniques for short, medium and long term storage. How is it useful in plant conservation (10)

x-x-x