(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 1 7 9 7 4

Exam. Code : 0 0 3 5

B.Sc. (Hons.) Biotechnology 3rd Semester

(2124)

PLANT TISSUE CULTURE

Paper : BIOT-304-T

Time Allowed : Three Hours] **[Maximum Marks : 67**

Note :— (1) Attempt **FIVE** questions in all.

(2) Select **ONE** question compulsorily from each unit.

(3) Q.No. 1 is compulsory.

1. Compulsory Question :

(i) What are Cybrids ? How are they produced ?

(ii) Give the function of elicitors.

(iii) What are the problems encountered in tissue culture of woody plants ?

(iv) What are Synthetic seeds ? Give their importance.

(v) Discuss virex indexing. 3×5=15

UNIT—I

2. (a) Give the principle, working and importance of an Autoclave.

(b) Describe the various components of Plant Tissue Culture medium. 6.5×2=13

3. (a) Give a brief account of washing and sterilization of Glassware.

(b) What is micropropagation ? Describe the various stages involved in the process. 4+9

UNIT—II

4. (a) Discuss the process of production of haploids *in vitro* using anther culture.

(b) Describe the methods for production of disease-free plants through tissue culture. 6.5×2=13

5. (a) Give a brief account of Round up/Clean up.

(b) Give the production and application of somaclonal variations for crop improvement. 4+9

UNIT—III

6. (a) Describe the Process of isolation and purification of protoplasts.

(b) Discuss the Identification and characterization of somatic hybirds giving suitable examples. 6.5×2=13

7. Give a brief account of the following :

(a) Selection and sorting of Cybrids.

(b) Discuss the applications of protoplast hydridization technology. 4+9

UNIT—IV

8. (a) Discuss the use of Plant Tissue Culture as production systems for extraction and isolation of secondary metabolites.

   (b) Discuss the various methods for conservation of Plant Genetic Resources. 6.5×2=13

9. Give an account of the following :

   (a) Cryopreservation.

   (b) Production of secondary metabolites on a commercial scale. 4+9

UNIT—IV

8. (a) Discuss the use of Plant Tissue Culture as production systems for extraction and isolation of secondary metabolites.

   (b) Discuss the various methods for conservation of Plant Genetic Resources. 6.5×2=13

9. Give an account of the following :

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