Unit IV

8. Discuss the following : **8×2=16**

(a) Production and applications of synthetic seeds

(b) Edible vaccines and their prospects.

9. Write about applications of plant tissue culture in agriculture and forestry. **16**

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M.Sc. EXAMINATION, 2025

(Fourth Semester)

(Regular & Re-appear)

BOTANY

Plant Tissue Culture

Time : 3 *Hours*] [*Maximum Marks :* 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. Write short notes on the following : **2×8=16**

   (i) Organogenesis

   (ii) Protoplast isolation

   (iii) Secondary metabolites

   (iv) Totipotency

   (v) Anther culture

   (vi) Somatic embryogenesis

   (vii) Callus

   (viii) Embryo culture.

Unit I

2. Write a detailed note on somatic hybridization and its applications. **16**

3. (a) Explain the principle and scope of plant tissue culture.

   (b) Discuss about cybrids, their formation and applications. **8×2=16**

Unit II

4. Write about production of haploid plants along with their significance. **16**

5. Write notes on the following : **6,5,5**

   (a) Production of triploid plants

   (b) Cryopreservation

   (c) Meristem culture.

Unit III

6. Discuss the causes and applications of somaclonal variations. **16**

7. Explain the following : **8×2=16**

   (a) Plant bioreactors and their application

   (b) Mechanism of somaclonal variations.