

**CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN,
NUVEM-GOA**

B.Sc. CBCS Semester V Examination, January 2021

Subject Code: BOD101 (Plant Tissue Culture) Subject Name: BOTANY-DSE

Total Marks: 60 Date: /01/2021 Duration: 2 Hours Total No. of pages: 01

Instructions: 1) *All questions are compulsory.*

2) *Figure to the **right** indicates **maximum marks** assigned to the question.*

3) ***Draw** appropriate labelled diagrams **wherever** necessary.*

Q. 1. Answer **any three** of the following: (3 x 4 marks = 12)

- i. Write a note on sterilization practices adopted in plant tissue culture.
- ii. What are plant growth regulators? Explain the role of auxins and cytokinins in tissue culture.
- iii. Give the protocol of meristem culture.
- iv. What is somatic hybridization? Give its applications.
- v. Explain any two methods for inducing protoplast fusion.

Q. 2. Answer **any three** of the following: (3 x 4 marks = 12)

- a. Write a note on any four basic requirements in plant tissue culture.
- b. Describe the nurse culture technique in pollen culture.
- c. Explain the characteristics of callus tissue.
- d. List the applications of root culture.
- e. Explain any two methods for selection of hybrids.

Q. 3. A. What is somaclonal variation? Comment on the causes of somaclonal variation. (6)

OR

A. Write a note on the maintenance of cultures and subculture. (6)

B. What are synthetic seeds? How are they produced?
Add a note on their importance. (6)

Q. 4. A. Give the protocol and applications of embryo culture. (6)

OR

A. Give an account on the principle and applications of cell suspension culture. (6)

B. Explain the selection, isolation and sterilization of explant. (6)

Q. 5. A. Briefly explain the role of plant tissue culture in agriculture. (6)

OR

A. Briefly explain the production of secondary metabolites in culture. (6)

B. Give an account on batch cultures. Add a note on testing viability of cells in a suspension culture. (6)

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