

**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**

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**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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