

Parvatibai Chowgule College of Arts and Science  
Autonomous

B.Sc. Semester End Examination, February 2022

Semester: V

Subject: Biotechnology

Course Title: Plant Biotechnology (Elective)

Duration: 2 hours

Max. Marks: 45

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- Instructions: 1. All the questions are compulsory; an internal choice is available.  
2. Figures to the right indicate maximum marks to the question.  
3. Draw neatly labelled diagrams wherever necessary.
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Q.1. Answer ANY THREE of the following: (09)

- Write a short note on surface sterilization techniques used in plant tissue culture.
- Explain the principle behind root culture.
- What are the ideal conditions for incubation and maintenance of cultures/ plants?
- Write a short note on the different constituents that make up the MS media.

Q.2. Answer ANY TWO of the following: (12)

- Tabulate six points of difference between batch and continuous types of cell suspension system.
- Explain the application of plant tissue culture in forestry.
- Explain habituation in callus culture and give three differentiating points between the types of callus based on texture.

Q.3. Answer ANY TWO of the following: (12)

- Write a note on *Bacillus thuringiensis* and explain the toxic action of *cry protein* in insect resistance of plant.
- This method of protoplast isolation is most widely used as it gives a good yield of viable cells. Name the method and explain in brief the stages involved in protoplast culture.
- Are secondary metabolites used for the growth and development of plants? Justify your answer.