Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: Oct./Nov. 2024
Faculty: Science and Technology

Program: B. Sc. Biotech (04) **Semester: V** **SET: A**
Program (Specific): Biotechnology **Course Type: Core**
Class: T. Y. B. Sc. **Max. Marks: 35**
Name of the Course: Plant Tissue Culture
Course Code: 24BBT-503 **Time: 2 Hr**

Instructions to the candidate:

1) ***There are 4 sections in the question paper. Write each section on separate page.***
2) ***All Sections are compulsory.***
3) ***Figures to the right indicate full marks.***
4) ***Draw a well labelled diagram wherever necessary.***

SECTION: A

Q1) Answer the following (Attempt any 5/6) **5**

1. Define Totipotency.
2. What is organ culture?
3. Give two examples of auxin hormones.
4. Write two applications of the plant tissue culture technique.
5. Name any 2 methods used for measuring growth of a suspension culture.
6. What is a cybrid?

SECTION: B

Q2) Answer the following (Attempt any 5/6) **10**

1. Enlist different methods of artificial plant propagation.
2. Write the limitations of callus culture technique.
3. Differentiate between direct and indirect embryogenesis.
4. Write a short note on the dry heat sterilization technique
5. What is the significance of the Auxin: Cytokinin ratio in a PTC medium?
6. Write a short note on anther culture.

SECTION: C

Q3) Answer the following (Attempt any 2/4) 8

1. What are the critical points to be considered while handling protoplasts?
2. Principle and working of any 2 instruments required in PTC.
3. Schematic representation of axillary bud culture.
4. Describe the Bergmann Cell Plating technique.

SECTION: D

Q4) Answer the following (Attempt any 2/4) 12

1. What is embryo culture? Describe the factors effecting these cultures along with the disadvantages.
2. Explain the enzymatic methods of protoplast isolation, culture & fusion.
3. Enlist various plant growth regulators used in PTC. Describe their role in growth and development.
4. What is organogenesis? Give its applications and limitations.