22BTU632A

**PSG COLLEGE OF ARTS & SCIENCE**
(AUTONOMOUS)

**BSc DEGREE EXAMINATION MAY 2025**
(Sixth Semester)

Branch - **BIOTECHNOLOGY**

**MAJOR ELECTIVE COURSE- II: PLANT TISSUE CULTURE & TRANSGENIC TECHNOLOGY**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**
Answer **ALL** questions
**ALL** questions carry **EQUAL** marks (5 x 1 = 5)

1 Tissue culture was first practiced by _____.
(i) Skoog (ii) Laibach
(iii) Haberlandt (iv) Gautheret

2 Which of the following is the main application of embryo culture?
(i) Clonal propagation (ii) Production of embryoids
(iii) Induction of somaclonal variations (iv) Overcoming hybridisation barriers

3 A technique of micropropagation is _____.
(i) Somatic hybridisation (ii) Protoplast fusion
(iii) Somatic embryogenesis (iv) Embryo rescue

4 Identify the following vector used in crop improvement and crop management.
(i) Agrobacterium (ii) Plasmid
(iii) Cosmid (iv) Phasmid

5 The protein crystals of *B. thuringiensis* contain toxic _____ protein.
(i) Bactericidal (ii) insecticidal
(iii) fungicidal (iv) antibiotic

**SECTION - B (15 Marks)**
Answer **ALL** Questions
**ALL** Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a List out the three steps of organogenesis.
OR
b List out the media constituents of PTC.

7 a Outline the embryo culture and write its advantages.
OR
b Explain the concept of germ cell conservation.

8 a Virus Indexing - A key tool for healthy tissue selection- justify.
OR
b Explain the significance of somoclonal variation.

9 a List out the benefits of particle bombardment.
OR
b State the function of Plantibodies.

10 a List out the Herbicides resistance crops.
OR
b What is RFLP and how is it used?

**Cont...**

## SECTION -C (30 Marks)

Answer **ALL** questions
**ALL** questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Highlight the key discoveries in plant tissue culture.

OR

b Describe in detail about synthetic seed technology.

12 a Outline the steps involved in protoplast technology.

OR

b Point out the applications of cybrids.

13 a Describe in detail about hairy root culture.

OR

b Categorize the types of secondary metabolites.

14 a Discuss in detail about edible vaccines.

OR

b List out the Ri and Ti derived vectors.

15 a Describe the current status of GM crops.

OR

b Elaborate the steps involved in RAPD.

Z-Z-Z END