

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024
(Fourth Semester)

Branch – BOTANY

PLANT BIOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 The pair of hormones required for a callus to differentiate are _____.
(i) Ethylene and Auxin (ii) Auxin and Abscisic acid
(iii) Auxin and cytokinin (iv) Cytokinin and gibberellin
- 2 What is Dimethyl sulfoxide used for?
(i) Chelating agent (ii) Cryoprotectant
(iii) A gelling agent (iv) An Alkylating agent
- 3 The production of secondary metabolites requires the use of _____.
(i) meristem (ii) protoplast
(iii) cell suspension (iv) bud
- 4 A vector that can clone only a small DNA fragment is
(i) cosmid (ii) plasmid
(iii) YAC (iv) BAC
- 5 The first transgenic crop is
(i) Pea (ii) Banana
(iii) Tobacco (iv) Cotton

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Discuss about totipotency.
OR
b Explain the physiological role of cytokinin.
- 7 a State about embryogenesis.
OR
b Illustrate the cybrid production.
- 8 a Determine the significance of crop improvement.
OR
b Analyze the techniques of cryopreservation.

Cont...

- 9 a Explain about shuttle vectors.
OR
b Discuss briefly about YAC.
- 10 a Analyze the techniques of northern hybridization.
OR
b Determine about Maxam and Gilbert sequencing.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Enumerate the steps involved in sterilization of explants.
OR
b Categorize the various types of media.
- 12 a Criticize about cell suspension culture.
OR
b Analyze about somaclonal variation.
- 13 a Elucidate the methods of isolation in protoplast.
OR
b Interpret the production of haploids.
- 14 a Criticize about plasmids.
OR
b Determine the screening of transformants.
- 15 a Construct the genomic DNA libraries.
OR
b Enumerate on nucleic acid sequencing.

Z-Z-Z

END