

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Fifth Semester)

Branch - **BIOCHEMISTRY**

TISSUE CULTURE AND BIOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(5 x 1 = 5)

- 1 Production of embryo-like structures from callus is known as
(i) meristemoids (ii) explantating
(iii) embryogenesis (iv) germplasm
- 2 The culture and maintenance of individual plant cells in a liquid medium is
(i) Anther culture (ii) Suspension culture
(iii) Meristem culture (iv) Embryo culture
- 3 In animal cell culture the CO₂ levels in the incubators are usually maintained at
(i) 2% (ii) 1%
(iii) 5% (iv) 10%
- 4 To keep them in a totipotent state, embryonic stem cells need to be maintained in a medium supplemented with ?
(i) growth hormone (ii) leukemia inhibiting factor
(iii) nestin (iv) insulin
- 5 Which is the best method for checking mycoplasma contamination in a mammalian cell line
(i) Southern Hybridization (ii) ELISA
(iii) PCR (iv) Western Hybridization

SECTION - B (15 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks

(5 x 3 = 15)

- 6 a Summarize about gynogenesis.
OR
b Prepare a detailed note on Somatic hybrids and cybrids.
- 7 a Explain the properties of Ti plasmids.
OR
b Illustrate herbicide resistance plants.
- 8 a Discuss about Selection of explants.
OR
b Give a detailed account on properties cell lines.
- 9 a Discuss in detail about interferons.
OR
b Elaborate about Humanized antibodies.
- 10 a Explain Human genome project.
OR
b Give the significance of Antisense technology.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Enumerate Protoplast culture in detail.
OR
b Elucidate Meristem culture and virus elimination in detail.
- 12 a List out the various gene transfer techniques.
OR
b Give a brief note on stress resistant Transgenic plants.
- 13 a Elaborate about steps in secondary cell culture preparation.
OR
b Explain about various properties of cells in animal cell culture.
- 14 a Evaluate the process of Production of Vaccines through rDNA technology.
OR
b Construct the steps in production of Monoclonal antibodies.
- 15 a Outline salient features of Nuclear transfer and cloning of animals.
OR
b Explain the use of viral vectors for gene therapy.

Z-Z-Z

END