22BCU519

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Fifth Semester)

Branch – **BIOCHEMISTRY**

TISSUE CULTURE & BIOTECHNOLOGY

Time: Three Hours Maximum: 50 Marks

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

1. What is the primary purpose of the MS medium in plant tissue culture?
(i) To provide nutrients for plant growth (ii) To prevent contamination
(iii) To sterilize plant tissues (iv) To inhibit plant growth

2 The bacterium commonly used for plant genetic transformation is:
(i) Escherichia coli (ii) Bacillus thuringiensis
(iii) Agrobacterium tumefaciens (iv) Rhizobium leguminosarum

3 Which of the following is a commonly used medium for animal cell culture?
(i) Murashige and Skoog (MS) medium (ii) Luria Bertani (LB) broth
(iii) Dulbecco's Modified Eagle Medium (iv) Sabouraud dextrose agar

4 Which of the following is the first vaccine produced using recombinant DNA technology?
(i) Hepatitis B vaccine (ii) Polio vaccine
(iii) Rabies vaccine (iv) Tuberculosis vaccine

5 Which of the following is a common vector used in gene therapy?
(i) Bacteria (ii) Plasmids
(iii) Viruses (iv) Ribosomes

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

6 a Explain the callus culture.
OR
b Outline the culture regeneration.

7 a Describe the binary vectors.
OR
b Explain the term transgenic plants.

8 a Explain the secondary cell culture.
OR
b Explain the transformation technique.

9 a Explain the term interferons.
OR
b Outline the hybridoma technology.

10 a Explain the term gene targeting.
OR
b Describe the animal pharming.

Cont...

SECTION -C (30 Marks)

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

11 a. Discuss the haploid production.

OR

b. Summarize the term micropropagation.

12 a. Discuss the cloning vectors.

OR

b. Summarize the antisense RNA technology.

13 a. Describe the media preparation.

OR

b. Elaborate the properties of transformed cells.

14 a. Discuss the production of vaccines through rDNA technology.

OR

b. Elaborate the production of monoclonal antibodies.

15 a. Discuss the cloning of animals.

OR

b. Elaborate the gene therapy for inherited disorders.

Z-Z-Z

END