

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Fifth Semester)

Branch – BIOCHEMISTRY

TISSUE CULTURE & BIOTECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

- The most common solidifying agent used in micropropagation is
(i) agar (ii) dextran (iii) Mannan (iv) all of these
- In plant tissue culture, what is term ORGANOGENESIS mean?
(i) formation of callus culture
(ii) formation of root and shoot from callus culture
(iii) genesis of plants
(iv) none of the above
- The culturing of cells in liquid agitated medium is called
(i) liquid culture (ii) micro propagation
(iii) Agar culture (iv) suspension culture
- Which of the following is best suited method for production of virus free plants?
(i) embryo culture (ii) meristem culture
(iii) ovule culture (iv) anther culture
- What are the main constituents of culture for animal cell growth?
(i) Glucose and Glutamine (ii) Growth factors
(iii) Cytokines (iv) All of these
- The following are methods of sterilization EXCEPT:
(i) Dry heat sterilization (ii) Autoclaving
(iii) Sterilization by filters (iv) Laminar airflow
- The first vaccine produced from animal cell culture was
(i) Hepatitis B vaccine (ii) Influenza vaccine
(iii) Small pox vaccine (iv) Polio vaccine
- In monoclonal antibody technology, tumor cells that can replicate endlessly are fused with mammalian cells that produce an antibody. The result of this cell fusion is
(i) Hybridoma (ii) myeloma
(iii) natural killer cell (iv) lymphoblast
- Animals that have had their DNA manipulated to possess and express an extra (foreign) gene are known as _____.
(i) transgenic animals (ii) nude animals
(iii) infected animals (iv) Bt animals
- ADA deficiency is caused due to _____ of the gene for adenosine deaminase.
(i) addition (ii) change (iii) deletion (iv) multiplication

Cont...

SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks

(5 x 7 = 35)

11. a) Comment on media for PTC.
OR
b) Give a brief account of protoplast technology.
12. a) Explain about Agrobacterium mediated gene transfer.
OR
b) Write an account on plant viruses as cloning vectors.
13. a) Give account on transformation Techniques of ATC.
OR
b) What are the properties of cells in culture?
14. a) How recombinant proteins produced by animal cell cultures?
OR
b) Explain about production of vaccines by rDNA technology.
15. a) Give account on Human Genome Project.
OR
b) Illustrate on gene therapy using viral vectors.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks

(3 x 10 = 30)

16. Explain in detail about Micropropagation technology.
17. Give account on transgenic plants.
i). Pest resistance plants
ii). Herbicide resistance plants
18. What are primary and secondary cell culture?
19. Explain about monoclonal antibodies production by hybridoma technology.
20. Give a detail note on gene therapy for inherited disorders.

Z-Z-Z

END