

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2022  
(Sixth Semester)

Branch – ZOOLOGY

**BIOTECHNOLOGY – II**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

- Who is known as the father of tissue culture?  
(i) Bonner (ii) Laibach  
(iii) Haberlandt (iv) Gautheret
- 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
- Which of the following is the method of transfection for making transgenic animals  
(i) Transfer of DNA  
(ii) Transfer of whole individual chromosomes f fragment  
(iii) Transfer of whole nuclei  
(iv) All of the above
- Molecular markers include  
(i) RFLP (ii) RAPD  
(iii) AFLP (iv) All the above
- What is Callus?  
(i) Tissues that grow to form an embryoid  
(ii) An unorganised actively dividing the mass of cells maintained in a culture  
(iii) An insoluble carbohydrate  
(iv) A tissue that grows from an embryo
- Name the first transgenic virus resistant plant?  
(i) Rice (ii) Cotton  
(iii) Tobacco (iv) Tomato
- Slow freezing method of cryopreservation is done at \_\_\_\_\_ C/min.  
(i) 0.5-5.0. (ii) 0.4-5.0.  
(iii) 0.3-5.0. (iv) . 0.2-5.0.
- Which one of the following is a secondary metabolite?  
(i) Proteins (ii) Lipids  
(iii) Vitamins (iv) Steroids
- Which one of the following microbes is a proteinacious infectious agent?  
(i) Fungi (ii) Prions  
(iii) Bacteria (iv) Protozoa
- Which one of the following is a pair of biofertilizers?  
(i) Salmonella and E.coli (ii) Rhizobium and grasses  
(iii) Nostoc and legume (iv) Azolla and BGA

Cont...

**SECTION - B (35 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 7 = 35)

- 11 a How do you establish a primary cell culture?  
OR  
b What are different cell lines?
- 12 a Explain the blood factor VIII deficiency.  
OR  
b What is a transgenic animal? Explain it with one example.
- 13 a How do you prepare callus tissue culture technique?  
OR  
b Describe the somatic hybridization with an example.
- 14 a Explain the microbial products and their applications.  
OR  
b Summarise the uses of resistance and side effects in antibiotics.
- 15 a How do you calculate nutritional value? Explain.  
OR  
b Narrate the methods of cell immobilization and its applications in biotechnology.

**SECTION - C (30 Marks)**

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 Enumerate the requirements in performing animal cell culture maintenance.
- 17 Elucidate the desirable properties and function of molecular markers.
- 18 Discuss the transgenic plants and their uses.
- 19 Differentiate the primary metabolites and secondary metabolites.
- 20 Point out the importance and application of enzymes in biotechnology.

Z-Z-Z

END