



## Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)

Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B

Coimbatore - 641 043, Tamil Nadu, India

### Bachelor's Degree Examination - June 2021

#### VI Semester

**Class : III UG**

**Major : Biochemistry and Biotechnology**

**Time : 3 Hours**

**Max. Marks: 100**

#### 18BBTC17 Animal Cell Culture and Animal Biotechnology

Course Outcomes:

1. Describe the requirements to initiate cell culture facility.
2. Compare and contrast different methods of embryo transfer.
3. Conceive suitable methods for organ culture and tissue engineering.
4. Devise the methods for improved development of therapeutic proteins.
5. Apply her expertise for large scale production of Metabolites.

#### PART A

**10 x 1 = 10**

#### Choose the Correct Answer

1. Select the optimum pH range for the animal cell growth in a animal cell culture medium. CO1K1  
a. 7.0 - 7.4 b. 7.5 - 7.9  
c. 6.5 - 6.9 d. 8.0 - 8.5
2. Identify the role of Glucose in animal cell culture media. CO1K1  
a. Cell adhesion b. Supplies Energy  
c. Cell proliferation d. Alter the pH
3. Label the properties of Transformed cells CO3K1  
a. High serum requirement b. Decreased protease secretion  
c. Longer population time d. Loss of contact inhibition
4. Select the factors that mostly indicate the replacement of the cell culture medium CO2K1  
a. Cell concentration b. Decrease in pH  
c. Cell type d. Morphological changes
5. Match the HAT medium in Monoclonal antibody production. CO4K1  
a. Hypoxanthine, Aminopterin and Thymidine b. Hypoxanthine, Aminopterin and Tyrosine  
c. Hydroquanine, Aminopterin and Thymidine d. Hydroquanine, Aminopterin and Tyrosine
6. Select the cells which are used for the preparation of Hybridomas in monoclonal antibody production CO4K1  
a. Fusing T cells with Myeloma cells b. Fusing B cells with Myeloma cells  
c. Fusing T Helper cells with Myeloma cells d. Fusing B memory cells with Myeloma cells
7. Label the Antiviral substance CO4K1  
a. Interferon b. Clotting Factor VIII  
c. Tissue plasminogen activator d. Growth hormone
8. Identify the subunit recombinant vaccine CO5K1  
a. Vaccina viral vaccine b. Cholera vaccine  
c. Salmonella vaccine d. Foot and Mouth disease vaccine
9. Select the term that indicates the production of more ovarian follicles by increasing the concentration of Gonadotrophic hormone. CO5K1  
a. Embryo splitting b. Embryo biopsy  
c. Super ovulation d. Embryo sexing
10. Name the term that indicates the introducing a foreign gene into animals CO5K1  
a. Transduction b. Transfection  
c. Transcription d. Translation

**Part B**

**5 x 6 = 30**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

- 11.a. Write short notes on Erythropoietin. CO4 K3  
(or)
- 11.b. List out the constituents in serum and mention the importance of serum in media. CO1 K3
- 12.a. Explain Non – Anchorage dependent cells. CO2 K3  
(or)
- 12.b. Outline the characteristics of Transformed cells. CO2 K4
- 13.a. Illustrate the method of transfection of animal cells. CO3 K2  
(or)
- 13.b. Write short notes on transplantation of cultured animal cells. CO3 K2
- 14.a. Examine the production technique and the importance's of Interferons. CO3 K3  
(or)
- 14.b. Explain in detail on Tissue plasminogen factor. CO4 K3
- 15.a. Discuss the process of cell cloning of Dolly. CO5 K2  
(or)
- 15.b. Evaluate the terms Monolayer culture and Suspension culture. CO5 K4

**Part C**

**5 x 12 = 60**

**Answer ALL questions**

**Each answer should not exceed 800 words or fourpages**

- 16.a. Illustrate the requirements for animal tissue culture. CO1 K4  
(or)
- 16.b. Outline the NGF and EGF promoting proliferation of animal cells. CO1 K4
- 17.a. Explain the types, characteristics and maintenance of cell lines. CO2 K3  
(or)
- 17.b. Examine the primary explant culture technique. CO2 K3
- 18.a. Summarize the steps in the production of Monoclonal antibodies. CO3 K5  
(or)
- 18.b. Illustrate the process of somatic cell fusion technique of animal cells CO3 K4
- 19.a. Explain the Insulin production. CO4 K4  
(or)
- 19.b. Outline the expression of cloned proteins and production of Vaccines in animal cells. CO4 K4
- 20.a. Explain IVF technique and mention its advantages. CO5 K4  
(or)
- 20.b. Evaluate the gene transfer methods in Transgenic animal production. CO5 K4

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