



Avinashilingam Institute for Home Science and Higher Education for Women

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

Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – May 2025 II Semester

Class : I P.G.
Major : Biotechnology

Time: 3 Hours
Max. Marks: 100

23MBTCO8 Animal Biotechnology

Course Outcomes:

CO1 : Apply the knowledge of cell culture techniques in the production of biological

CO2: Examine the benefits of animal transgenesis

CO3: Appreciate the benefits of therapeutic cloning to treat human diseases

CO4: Review the benefits and challenges of animal cloning

CO5: Explore the benefits of stem cell therapy in health and medical fields

CO6: Adopt suitable integrated pest management strategies to significantly reduce the use of pesticides

Part A

10 x 1 = 10

Choose the Correct Answer

1. Identify the medium that is mainly used for culturing of animal cell CO1K1
a. Sephadex b. Silica c. Agar -Solidified medium d. Acrylamide
2. Name the non membrane bound organelle exclusively found only in animal cell CO1K1
a. Sephaerosome b. Glyoxisome c. Centriole d. Peroxisome
3. Recall the secondary culture of animal cell is called as CO2K1
a. Mother culture b. Primary culture
c. Sub-sub culture d. Sub culture
4. Label the cell line that is basically used in mammalian cell culture CO2K1
a. Chinese Hamster Ovary b. HeLa Cells c. MCF-7 d. Hep-2 Cells
5. Examine the stem cell or immature cell that are responsible for giving rise to different cell types CO3K1
a. Totipotency b. Pluripotency c. Embryonic d. Multipotency
6. Quote the term that refers to the varying ability of stem cells to differentiate into specialized cell types. CO3K1
a. Cell potency b. Cell differentiation c. Cell division d. Cell viability
7. Identify the specific hormone that is produced from metabolism of animal cells which is involved for growth and development CO4K1
a. Interferon b. Insulin c. Somatostatin d. Inulin
8. Select the animal model that is mainly used for studying embryology. CO4K1
a. Drosophila b. Zebrafish c. Chick embryos d. Mice
9. Name the first successful cloning animal in cloning research. CO5K1
a. Dolly Sheep b. Cat c. RAT d. Cow
10. Identify the pheromones trap attracts CO5K1
a. Male moths b. Female moths c. Caterpillar d. female bugs

Part B **5 x 6 = 30**
Answer ALL questions
Each answer should not exceed 400 words or two pages

- 11.a. Explain the growth requirements for animal tissue culture. CO1K1
(or)
- 11.b. State the composition of culture media for animal tissue culture. CO1K2
- 12.a. Describe the anchorage dependence of growth in animal cell culture. CO2K2
(or)
- 12.b. Explain short remarks on secondary culture method for animal cell culture. CO2K2
- 13.a. Summarize the mechanism of embryonic culture and applications. CO3K2
(or)
- 13.b. Predict the role of adult stem cells in clinical trial. CO3K2
- 14.a. Explain the concept gene knockout technologies. CO4K2
(or)
- 14.b. Describe the concept of human therapeutic cloning. CO4K2
- 15.a. Describe the applications of on disease resistant transgenic animal in aqua Culture. CO5K2
(or)
- 15.b. Outline the mechanism of somatic cell cloning of Dolly. CO5K2

Part C **5 x 12 = 60**
Answer ALL questions
Each answer should not exceed 800 words or four pages

- 16.a. Describe the growth requirements in cell culture. CO1K2
(or)
- 16.b. Explain the role of growth factors in promoting proliferation of animal cells. CO1K2
- 17.a. Summarize the steps involved in scaling up of cell cultures and transfection of animal cells. CO2K2
(or)
- 17.b.. Describe the mechanism of cytotoxicity and viable cells assay. CO2K2
- 18.a. Elaborate on tissue engineering ,stages ,support materials and applications. CO3K2
(or)
- 18.b. Describe the applications of regenerative medicines. CO3K1
- 19.a. Explain the relationship between stem cells and cloning in animal sources. CO4K2
(or)
- 19.b. Summarize the developments in live stocks genomics and applications of molecular markers. CO4K2
- 20.a. Discuss the biotechnology principles of silk worm and insect cell culture and its products. CO5K2
- 20.b. Summarize various marine resources for production of therapeutics in marine biology . CO5K3
