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H-7326

M.Sc. (II Semester) Examination, 2022

BIOTECHNOLOGY

Paper – IV

(*ANIMAL BIOTECHNOLOGY*)

Time Allowed: Three Hours

Maximum Marks: 70

Section-A

Note:- Attempt any ten questions. Each question carries one mark.

Q.I. Objective Type Questions **1x10**

1. Culture freshly prepared from isolated tissue is known as .....
2. The 2D cell culture technique was developed by.....
3. The cell line derived from the human embryonic lung is.....
4. Name the dye used in MTT -assay……..
5. The first monoclonal antibody to have been approved for therapeutic use is .....

6. Two defining properties of any stem cell are ……and……..
7. Who is known as father of animal tissue culture?
   a) Harrison b) Roux
   c) Ross d) Arnold
8. Optimum pH for the growth of animal cell is:
   a) 5.2-5.4 b) 7.2-7.4
   c) 4.2-7.4 d) 6.8-7.8
9. The major disadvantage of the use serum in culture medium is:
   a) It is expensive
   b) Composition varies batch to batch
   c) Source of contamination
   d) All of the above
10. An example of oldest cell line used in culture would be:
    a) HeLa Cell Line b) CHO Cell Line
    c) VERO Cell Line d) BHK Cell Line
11. Subculturing of cells increases passage number. **(State whether true or false).**
12. Suspension culture is employed for anchorage independent cells. **(State whether true or false).**

Section-B

Note:- Attempt any five questions. Each question carries two marks.

Q. II. Very Short Answer Type (25-30 Words) 2x5

1. Define pluripotency.
2. Why is it required to culture animal cells at 5% CO_2 concentration?
3. What is the role of phenol red in animal cell culture?
4. Write any two indications of viral contamination in cell culture?
5. What are feeder cells?
6. What are microcarrier beads?
7. What is meant by cold trypsinization?

Section-C

Note:- Attempt any five questions. Each question carries four marks.

Q.III. Short Answer Type (250 Words) 4x5

1. Differentiate between primary and secondary culture.
2. Discuss the basic laboratory plan for lab scale animal cell culture facility.
3. Give a brief account on suspension culture.
4. Give a brief account on different types of animal cell culture vessels in brief.
5. Describe various strategies to reduce contamination in animal cell culture.
6. Discuss the strategies for sterilization of thermolabile materials and reagents.
7. Describe the applications of animal cell culture techniques.

Section-D

Note:- Attempt any three questions. Each question carries ten marks.

Q.IV. Essay type (more than 500 Words) 3x10

1. What are stem cells? Discuss the scope and importance of stem cell banking.
2. What is a cell line? Discuss methods of characterization and maintenance of cell lines.

3. What is meant by animal cell culture media? Describe the components of animal cell culture media with their function. Also give examples of any four media used for animal cell culture.

4. Discuss the strategies for virus mediated gene transfer in animal.

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