(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 2 5 9 4 6

Exam. Code : 0 4 3 7

M.Sc. Bio-Technology 3rd Semester

(2125)

ANIMAL CELL SCIENCE AND TECHNOLOGY

Paper : MBIO-301

Time Allowed : Three Hours] **[Maximum Marks : 80**

Note :— Attempt **five** questions in all. Question No. **1** is compulsory. Attempt **one** question from each Unit. All questions carry equal marks.

1. Short answers :

(a) How can cell growth be measured?

(b) What are the advantages of serum-free media?

(c) Enlist features of transformed cell lines.

(d) Give applications of transgenic fish.

(e) What are the ethical issues of reproductive cloning?

(f) What are scaffolds and its types?

(g) Enlist methods of embryo transfer.

(h) What are humanized antibodies? 2×8=16

UNIT—I

2. (a) What are the considerations in setting up of Animal cell culture laboratory? What are the major equipments required in aseptic working area? 8

(b) What is a complete media? Give significance of using serum in medium. 8

3. (a) Give various assays conducted for cytotoxicity analysis. 8

(b) Write notes on :

(i) CO_2 incubators

(ii) balanced salt solutions 8

UNIT—II

4. (a) What is primary culture? Give enzymatic disaggregation techniques. 8

(b) Discuss various strategies of scale up of monolayer cells. 8

5. (a) Write notes on :

(i) cell separation methods

(ii) hybridoma technology 8

(b) What is tissue engineering? Discuss role of stem cells in tissue engineering. 8

UNIT—III

6. (a) Discuss Retrovirus and Baculovirus vector based DNA transfer methods in animal cells. 8

   (b) What is immortalization of animal cells? How can it be induced? 8

7. (a) How can transgenic animals be produced? Elaborate applications of transgenic mice. 8

   (b) Discuss role of biotechnology in sericulture and pest control. 8

UNIT—IV

8. (a) What is reproductive cloning and its techniques? 8

   (b) Discuss *in vitro* fertilization. Give its applications. 8

9. (a) How can animal biotechnology be used in biodiversity conservation? 8

   (b) What is therapeutic cloning? Give its applications. 8