

Exam.Code:1032
Sub. Code: 7868

1129
M. E. (Bio-Technology)
First Semester
Elective – I
ME-BIO-105: Cell and Cell Technology

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Briefly answer the following:-
- Application of conditioned medium
 - Two antifungal agents used in animal cell culture
 - pH maintenance in open culture vessel
 - Two characteristic features of transformed cells
 - Major disadvantage of serum in animal cell culture medium
 - Two differences between expression and cloning vector
 - Method used for stable transfection
 - Two major advantages of therapeutic over reproductive cloning
 - Importance of xenotransplantation
 - Two major requirements for carrying out multiplex PCR analysis (10x1)

UNIT – I

- II. a) List out necessary equipments required for establishing a small size animal cell culture laboratory. Explain in detail working of flow cytometer. (7,3)
b) Write a note on extracellular matrix molecules.
- III. a) Define serum. Explain in detail all merits and demerits associated with the use of serum as a media component.
b) Provide an analysis on pH and temperature requirements of a cell culture. (7,3)
- IV. a) Write a brief note on immune-based cell separation techniques.
b) Cells cloning is an important step in the process of cell line development but quite difficult to achieve. Justify. Elaborate on methods to improve cloning efficiency of a culture. (3,7)

P.T.O.

(2)

- V. a) What is transfection? How many ways a transgenic animal homozygous for a gene can be generated?
b) Differentiate between reproductive cloning and cell therapy. (2x5)
- VI. a) Give an account of requirements for scaling up adherent cell cultures. Elaborate on various bioreactors systems used for scaling up an adherent culture.
b) Write a note on biological contamination in animal cell culture. (2x5)
- VII. a) Write a note on production of Factor VIII protein.
b) Define DNA fingerprinting. Give an analysis on restriction enzyme based cell characterization technique over PCR based method. (3x7)

x-x-x