

Exam. Code: 0909
Sub. Code: 6310

2074
B.E. (Biotechnology)
Fifth Semester
BIO-513: Animal Cell Culture and Biotechnology

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 Section.

x-x-x

1. Write a short note on followings

(1*10=10)

- a) Role of pH indicator in ACC medium
- b) Any growth hormone
- c) Two features of finite cell line
- d) Any two anti-mycoplasma agents
- e) Use of conditioned media
- f) Draw microscopic image of yeast contaminants
- g) Any tissue specific marker used for cell line characterization
- h) Name any isozyme
- i) Usages of split ratio
- j) Enzyme used for superovulation

Section-A

2. a) Describe the principle and procedure of dilution-based cell cloning methods. (**any two**)
(5)
b) What is the mathematical expression of cell growth kinetics? Derive the equation.
(5)
3. a) Describe in details five major nutrient requirements of cell culture, justifying their utility.
(7)
b) How DNA based cell line characterization differs from proteins based. (**any five**) (3)
4. a) How cell size and sedimentation velocity properties of cells are used in cell cloning.
(5)
b) Explain the principle and working of air-lift fermenter. Draw its neat and labelled diagram.
(5)

P.T.O.

(2)

Section- B

5. a) Describe the chemical-based gene transfer methods employed in cell culture manipulation. (5)
- b) How many ways transgenics could be generated? Explain the step wise process. (**any one**) (5)
6. a) Explain the rationale and procedure to achieve cryopreservation of cells. (5)
- b) Describing the properties, explain the steps wise process of generating embryonic stem cells. (5)
7. a) Explain the advancement in silkworm transgenic technology. (5)
- b) Write a note on (Any One) (5)
- I. Cell culture environment
 - II. Application of animal cell culture

x-x-x