

2063

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 very brief note on followings

(1\*10=10)

- a) Phenol red indicator
- b) EGF
- c) Nystatin
- d) Conditioned media
- e) Biological contamination
- f) Rational behind cell line characterization
- g) Microcarrier
- h) Significance of split ratio
- i) HCG
- j) Pluripotent stem cells

**Section-A**

2. a) Describe the process of cell cloning by dilution method? (5)  
b) Give a detailed account of physical method of cell separation based on cell size. (5)
3. a) Describe stepwise processes to establish primary culture. Construct a flow chart. (6)  
b) Compare the advantages of serum and serum free media. (4)
4. a) Write a note on DNA fingerprinting. (4)  
b) Describe scaling up of adherent cells using membrane bioreactors (draw diagram). Mention its merits and demerits. (6)

**Section-B**

5. a) Relate chemical and physical means of DNA transfection. (5)  
b) What is rationale behind slow freezing? Compare narrow neck liquid nitrogen containers with wide neck design. (5)
6. a) Elaborate on process and application of embryo transfer technology in farm animals. (5)  
b) Define founder animal? Discuss the methodology to generate a transgenic mouse homozygous for a trait. (5)
7. a) Employing western blot technique, design a step wise experiment to differentiate "A" cell line from "B". (5)  
b) Write a note on (Any one) (5)
  - i. Application of transgenic mice
  - ii. Pest control management through transgenic technology

x-x-x

