

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2438

Roll No.

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B.Tech.

(SEMESTER-VI) THEORY EXAMINATION, 2012-13

ANIMAL BIOTECHNOLOGY

Time : 3 Hours]

[Total Marks : 100

SECTION – A

1. Attempt **all** question parts : 10 × 2 = 20
- (a) List any 4 culture media used in animal cell culture.
 - (b) What is fibroblast ? Mention its function in cell culture.
 - (c) Write down the methods available for disintegration of animal tissues prior to culturing.
 - (d) What is serum and mention its advantages in using for culture media ?
 - (e) Mention the merits and demerits of using antibiotics in cell culture.
 - (f) Explain the role of CO₂ in animal cell culturing.
 - (g) What are the different gene transfer methods used in animal cells ?
 - (h) List the approaches used for scaling up the monolayer culture.
 - (i) What are the limitations of microencapsulation of cell cultures ?
 - (j) Mention the importance of marker genes in gene transfection.

SECTION – B

2. Attempt any **three** question parts. 3 × 10 = 30
- (a) Explain the following :
 - (i) Basic steps involved in preparation and sterilization of culture media.
 - (ii) Need of protein free media in animal cell culture.
 - (b) Describe the major types of biological contamination of cell culture and how to detect them.
 - (c) Write in detail about the process and requirements for the large scale production of animal cells.
 - (d) Elaborate the available methods in monitoring growth in cell culture and its significance.
 - (e) How transgenic farm animals are useful ? Discuss in detail about the safety and concerns of producing transgenic animals.



SECTION – C

Attempt **all** questions.

5 × 10 = 50

3. Attempt any **two** parts :

2 × 5 = 10

- (a) Mention the physicochemical properties of the culture media components.
- (b) Discuss in detail about the substrates used in the animal cell culture.
- (c) Is cell cloning and animal cloning are same ? Discuss in detail about the process involved in the animal cell cloning and selection.

4. Attempt any **one** part :

1 × 10 = 10

- (a) Explain in detail about the basic media requirements and the growth factor in cell culture media.
- (b) Elaborate the production of therapeutic products from animal culture technology.

5. Attempt any **one** part :

1 × 10 = 10

- (a) Write in detail the various ways of producing transgenic animals.
- (b) Elaborate the methods and strategies used in gene targeting for animal cells.

6. Attempt any **one** part :

1 × 10 = 10

- (a) Discuss in detail the various applications of stem cells. What are the techniques employed to generate stem cells from farm animals.
- (b) What are adherent and non-adherent cells ? Discuss the problems associated in growing adherent cells and how to overcome it ?

7. Attempt any **two** parts :

2 × 5 = 10

- (a) Explain in detail applications and problems related to the Xenografts from animals.
 - (b) Discuss about the various methods to transfer recombinant DNA to the animal cells.
 - (c) Describe the techniques used for maintaining the cell lines for longer period.
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