

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

PAPER ID : ME20

Roll No.

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**M. TECH. (Sem.II)**

**THEORY EXAMINATION 2015-16**

**ANIMAL TISSUE CULTURE**

Time : 3 Hours

Total Marks : 100

**SECTION-A**

1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2×10=20)
- What are the equipments required for animal tissue culture?
  - List the common defined animal cell culture media
  - What are the advantages of using serum-free media over media supplemented with serum?
  - How much carbon dioxide is required for mammalian cell culture and why?
  - Mention the methods to separate cells by chemical blockade
  - Give the advantages of using cell lines of vaccine production.
  - Give short notes on apoptosis
  - Mention the various uses of somatic cell genetics.
  - Write the major extracellular matrix components used for 3D cell culture.
  - Provide the applications of Fluorescence in situ hybridization

## SECTION-B

**Note:** Attempt any 5 questions from this section. (10×5=50)

1. Discuss in detail the role of serum in the animal cell culture
3. Elaborate the various supplements utilized and its role in the animal tissue culture
4. Distinguish between serum-free and protein-free media. Discuss in detail the specific applications of serum-free media in animal cell cultures
5. Discuss in detail the general methods using flow cytometry to measure cell death.
6. Illustrate the methods for synchronizing cells at specific stage of the cell cycle.
7. Explain the various methods used for disaggregation of tissues.
8. Discuss briefly the challenges to develop embryonic stem cells and its major applications
9. Illustrate the application of in-vitro fertilization in domestic cows.

## SECTION-C

**Note:** Attempt any 2 questions from this section. (15×2=30)

10. Discuss in detail the various methods to measure the population dynamics of cell cultures.
11. Provide an overview of micromanipulation of animal cells and its applications in breeding of animals.
12. Illustrate the different types of cell cloning and techniques involved in the process.

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