

**2013**

**M.Sc.**

**3rd Semester Examination**

**BIOTECHNOLOGY**

**PAPER—BIT-302**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Answer all questions.**

**Group—A**

1. Answer any *five* questions from the following : 2×5
  - (a) What is embryo splitting? Mention its importance.
  - (b) State the importance of Mesenchymal stem cell.
  - (c) What is feeder layer in animal cell culture?
  - (d) Mention the advantages and disadvantages of serum addition in animal cell culture.
  - (e) Mention the importance of Induced pluripotent stem cells.
  - (f) What do you mean by therapeutic cloning?
  - (g) What is allogeni and xenogeni cell source?
  - (h) Mention different commercially available artificial skin.

*(Turn Over)*

**Group—B**

Answer any *two* questions : 5×2

2. Briefly discuss the procedure of embryo transfer during *in vitro* fertilization.
3. Write down the principles related to the bioethics in animal genetic engineering.
4. What is MCTS ? State its application in Tissue engineering.  
2+3
5. Give an account of BSS. Comment on the sterilization of media required for animal cell culture.  
2+3

**Group—C**

Answer any *two* questions : 5×2

6. What is transgenesis ? How transgenic animal can be produced through nuclear transfer method ? State the application of knock out mice in animal biotechnology.  
2+5+3
7. Why is cell synchronisation necessary in animal cell culture ? Briefly describe different cell synchronization method.  
3+7
8. What are the importance of cell line characterisation ? What is Karyotyping and chromosome painting ?  
6+2+2
9. Briefly describe the properties of cells cultured from tumors. What do you mean by telomerase induced immortalisation ?  
7+3