

B.Sc. Bio-Technology Semester—VI

ANIMAL BIOTECHNOLOGY

Paper—BT-3

Time Allowed—3 Hours] [Maximum Marks—40

Note :— Section A (1×8 marks) is compulsory. Section B (5×4 marks) : Attempt any *five* questions. The answer should not exceed *two* pages. Section C (6×2 marks) : Attempt any *two* questions. The answer should not exceed *five* pages.

SECTION—A (Compulsory)

1. Write a brief account of the following :
 - (i) Difference in organ culture and cell culture.
 - (ii) Name two cancerous cell lines.
 - (iii) Electroporation.
 - (iv) Selection of hybrids methods.
 - (v) Nuc factories.
 - (vi) Difference in transgenic and knock out mice.
 - (vii) Describe the major four applications of genetic engineering technique in animal tissue culture.
 - (viii) Importance of embryonic stem cells culture.

SECTION—B

1. Which information regarding the characteristics features is recorded for a cell line ? Explain with examples.
2. How to initiate an organ culture and maintain it ?
3. Describe the methodology and significance of calcium phosphate precipitation method.
4. How to characterize the stem cells ?
5. How to detect transgenics ?
6. Give the various methods of cloning and collection of clones of cultured anchorage dependent cells.
7. Give the methods of scaling up of anchorage dependent cells.
8. Describe the methodology of IVF and its significance.

SECTION—C

1. Describe the induction of differentiation in animal cells and their maintenance.
2. Write a note on the expression vectors, their properties and selection and need.
3. What are bioreactors and how they are employed for the large scale production of suspension cultures ?
4. Write notes on any *two* :
 - Production of blood clotting factors through genetic engineering
 - Role of animal tissue culture in production of vaccines
 - Embryo transfer technology.