

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question No. 1 is Compulsory.
(2) Attempt any three questions out of remaining five.

1. (a) What is micro propagation? Explain the stages of micropropagation. 10
(b) What are ESCs? Explain the features of ESCs. 10
2. (a) Artificial seeds fall under two categories. Justify & explain them with proper examples. 10
(b) Define somatic Hybridization. Explain different methods of protoplast culture. 10
3. (a) Explain different methods of cell Separation for animal cells. 10
(b) What is plating Efficiency? Give methods of improving the plating efficiency. 10
4. (a) Explain the layout of the ATC Laboratory with a diagram. 10
(b) Explain the biology of cultured cells of animal origin. 10
5. (a) Define somatic embryogenesis. Explain the process of somatic embryogenesis. 10
(b) Explain the scale-up of plant tissue culture. 10
6. Write short notes on: 20
 - (a) Cloning
 - (b) Totipotency
 - (c) Microinjection
 - (d) Antibody Engineering