

2012

B.A./B.Sc. (General) Fifth Semester

Bio-Technology

BIOT-Elect-Sem-V-T: Plant and Animal Biotechnology

Time allowed: 3 Hours

Max. Marks: 75

**NOTE:** Attempt five questions in all, including Question No. 9 (Section- C) which is compulsory and selecting two questions each from Section A-B.

x-x-x

**Section-A**

1. a) Describe briefly the principle and process of somatic organogenesis?  
b) Differentiate between somaclonal and gametoclonal variations. (8, 7)
2. a) Explain the process of protoplast isolation in detail  
b) Describe somatic hybridization and its application? (8, 7)
3. a) Discuss the mechanism of T-DNA transfer in plants.  
b) Write a note on direct plant transformation. (7, 8)
4. a) Describe the process for genetic manipulation in plants for virus resistance.  
b) Write a short note on resistance to fungi and bacteria in plants? (9,6)

**Section-B**

5. a) Distinguish between primary and secondary culture  
b) Discuss in brief different laboratory instruments used for animal cell culture. (8, 7)
6. a) Write a note on contamination in animal cell culture.  
b) Discuss in detail the process of cryopreservation. (8, 7)
7. a) Discuss monolayer and suspension culture.  
b) Describe large scale production of animal cells in culture. (8,7)
8. a) What is transgenesis? Give applications of any two transgenic animals?  
b) What are stem cells? Discuss their applications in the field of biology. (8,7)

**Section-C**

9. a) Define gametoclonal variations?  
b) How protoplast viability can be tested?  
c) What are haploids? Mention its two applications  
d) What is indirect transformation?  
e) Enlist selectable markers for detection of transgenes in plants  
f) Define serum free media. Give its two advantages  
g) What are cryoprotectants? Give examples  
h) What are gene banks? Give their importance.  
i) What is contact inhibition?  
j) What is cytodifferentiation culturing?

(1.5X10=15)

x-x-x