

1127

B.A./B.Sc. (General) Fifth Semester
Bio-Technology
BIOT-Elect-Sem-V-T: Plant and Animal Biotechnology

Time allowed: 3 Hours

Max. Marks: 67

NOTE: Attempt five questions in all, including Question No. IX (Unit-III) which is compulsory and selecting two questions each from Unit I - II.

x-x-x

UNIT - I

- I. a) Describe the general organization of Plant tissue culture laboratory?
b) What do you understand by somaclonal and gametoclonal variations? (7,6)
- II. a) Give the various methods of protoplast isolation and viability testing?
b) Write an account of ovule and ovary culture and their significance? (7,6)
- III. a) *Agrobacterium tumefaciens* is known as the natural genetic engineer. Justify this statement?
b) Describe with the help of diagram how Ti plasmid is designed into vector for use in r-DNA technology. (7,6)
- IV. Give an account of developing genetically manipulated plants for:
a) Pest resistant
b) Herbicide Tolerant (2x6½)

UNIT - II

- V. a) Give an account of the various equipments required for animal cell culture laboratory?
b) What are the various sources of contamination in animal cell cultures? (7,6)
- VI. a) Write the principle and process of cryopreservation?
b) Describe the monolayer culture and the conditions which are required for the same? (7,6)
- VII. a) Explain the process of large scale production of animal cells in culture?
b) What do you understand by cytodifferentiation in the culturing of cells? (7,6)

(2)

VIII. a) Describe the SV40-based vectors? These vectors are specifically designed for transformation of which organisms?

b) How are embryonic stem cells generated and characterized? (7,6)

UNIT – III

IX. Explain briefly:-

a) What are somatic hybrids and cybrids?

b) What is embryo culture and embryo rescue?

c) Co-integrated vector

d) Dedifferentiation and redifferentiation

e) Gene banks

(5x3)

x-x-x