Exam.Code:0005
Sub. Code: 0474

2021
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) What is embryo culture? Give its applications.
b) Write notes on somatic embryogenesis and gametoclonal variations. (2x6½)

II. a) What is micropropagation? Discuss its applications.
b) Discuss methods of protoplast fusion. (2x6½)

III. a) Discuss vectors for gene transfer in plants.
b) How herbicide resistant plant varieties can be created using genetic engineering? (2x6½)

IV. a) Write note on DNA delivery methods in plants.
b) Discuss production of virus resistance plants. (2x6½)

UNIT – II

V. a) What are primary and secondary cultures?
b) Why monolayer cells are contact inhibited? (2x6½)

VI. a) Write notes on Cryopresevation and CO_2 incubators
b) What is serum free media for animal cultures? Discuss its components. (2x6½)

VII. a) Which bioreactors can be used for scale up of animal cell culture?
b) Discuss features of stem cells. What are applications of stem cells? (2x6½)

VIII. a) Give methods used to construct transgenic animals.
b) What is differentiation? How differentiation can be induced *in vitro?* (2x6½)

P.T.O.

UNIT – III

IX. Answer the following:-

a) What are immortal animal cell lines?

b) Give advantages of haploid culture.

c) What is ECM and its role?

d) What is T-DNA and its use?

e) Enlist two plant hormones and their use.

f) What are ethical problems related to stem cell research in animals?

g) What are the uses of gene banks?

h) What are somaclonal variations?

i) What is biofarming?

j) How transgenic plants are selected and screened? (10x1½)

x-x-x