

(i) Printed Pages: 3

Roll No.

(ii) Questions : 9

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B.A./B.Sc. (General) 5th Semester

(2122)

BIOTECHNOLOGY

Paper : Plant & Animal Biotechnology (BIOT-Elect-Sem.-V-T)

Time Allowed : Three Hours]

[Maximum Marks : 67

Note :— Attempt **FIVE** questions in all, by selecting **TWO** questions each from Sections A and B. Section C is compulsory. All questions carry equal marks.

SECTION—A

1. (a) Describe the embryo and endosperm culture and what is the significance of establishing such type of culture ? Mention its application. 8
- (b) How are haploid cultures raised ? Give the significance and application of haploid cultures. 7
2. (a) Give the various methods of protoplast isolation, testing of viable protoplasts. 8
- (b) Discuss the various regeneration techniques of protoplasts. 7
3. (a) Describe various direct methods of gene transfer in plants. 8

- (b) Describe with the help of diagram the mechanism of T-DNA transfer to plants. 7
4. Give an account on developing genetically manipulated plants with example for :.
- (a) Virus resistant 7½
- (b) Glyphosate and Glufosinate Tolerant. 7½

SECTION—B

5. (a) Give an account of establishment for primary and secondary cell culture in the laboratory. 7½
- (b) What are the various sources of contamination in animal cell cultures and mention the remedial measures can be taken to eradicate them ? 7½
6. (a) What is germplasm preservation ? Mention the importance of Cryopreservation. 7
- (b) How is monolayer culture established and how is it different from suspension cultures ? 8
7. (a) What are the various processes by which large scale production of animal cells are carried out ? 7½
- (b) What do you understand by cytodifferentiation ? How do the culturing cells retain their properties ? 7½
8. (a) Discuss the viral vector based method of transformation in animals. What are the applications of transgenic animals ? 8
- (b) Discuss the various types of stem cells and their application in medicinal cloning. 7

SECTION—C

9. Explain briefly :—

- (i) What are Somatic hybrids and cybrids ?
- (ii) Cointegrate vector.
- (iii) Somaclonal and gametoclonal variation.
- (iv) Serum free medium and role of antibiotics in medium.
- (v) What is biofarming ?

5×3=15