

Class – B.Sc-III (BT) Sem. VI

Subject – BT-2

Paper – Applications of Plant Tissue Culture

Time Allowed : 3 Hours

Maximum Marks : 40

SECTION-A

Note:- Attempt all parts. Each part carries 1 mark.

1. (a) Osmoticum
- (b) Calliclones
- (c) Cybridization
- (d) Somatic embryos
- (e) Elicitor
- (f) Hairy Root Culture
- (g) PEG
- (h) Parasexual Hybridization (1×8=8)

SECTION-B

Note:- Attempt any 5 questions. Each question carries 4 marks.

2. What are the advantages of producing secondary metabolites by plant tissue culture?
3. List reasons why the use of callus is often avoided for micropropagation.
4. Draw a flow chart depicting the steps involved in isolation, culture and regeneration of protoplast.
5. Differentiate between batch culture and continuous culture.

6. What are synthetic seeds? Give the method for their production. What is their importance?
7. Write characteristics of somaclonal variations.
8. Explain the technique of embryo rescue. Discuss its usefulness to plant breeder.
9. Enumerate the various applications of protoplast culture technique. (5×4=20)

SECTION-C

Note:- Attempt any two questions. Each question carries 6 marks.

10. What are secondary metabolites? Write the different methods for the *in vitro* production of secondary metabolites.
11. How micropropagation is achieved? What are the consequences of micropropagation on commercial application?
12. What are Somaclonal variations? Discuss the methods used for selection of variants for Disease resistance and Herbicide resistance.
13. Write short notes on
 - (a) Haploid production
 - (b) Applications of Somatic hybridization.

(2 × 6 = 12)
