

Exam. Code : 107406

Subject Code : 2331

B.Sc. (Bio-Technology) 6th Semester

APPLICATIONS OF PLANT TISSUE CULTURE

Paper—BT-2

Time Allowed—3 Hours] [Maximum Marks—40

Note :- (1) Attempt **ALL** parts from Section—A. Each question carries **1** mark. Answer to any part should not exceed **1/3** of a page.

(2) Attempt any **five** questions from Section—B. Each question carries **4** marks. Answer to any question to any part should not exceed **2** pages.

(3) Attempt any **two** questions from Section—C. Each question carries **6** marks. Answer to any question to any part should not exceed **5** pages.

SECTION—A

1. (i) Hardening
- (ii) Somatic embryogenesis
- (iii) Haploids
- (iv) Embryo rescue
- (v) Protoplast
- (vi) Somatic hybrids

(vii) Cell suspension culture

(viii) Secondary metabolites.

SECTION—B

2. Stages of micropropagation.
3. Modes of regeneration.
4. Somatic embryogenesis vs organogenesis.
5. Ovule culture.
6. Factors affecting protoplast isolation.
7. Somatic hybrids vs cybrids.
8. Role of bioreactors in secondary metabolite production.
9. Discuss transgenic approaches in secondary metabolite production.

SECTION—C

10. What is micropropagation ? Describe various factors that affect micropropagation and the technical problems.
11. What is somaclonal variation ? Write down the factors that affect the production of somaclonal variants and its application.
12. What is somatic cell hybridization ? Write down the method of selection of heterokaryons and the application of somatic hybrids.
13. Discuss the production of secondary metabolites by tissue culture and their applications.