

Exam. Code : 107406

Subject Code : 1877

B.Sc. (Biotechnology) 6th Semester

APPLICATIONS OF PLANT TISSUE CULTURE

Paper : BT-2

Time Allowed—Three Hours] [Maximum Marks—40

- Note :—** (1) Attempt **ALL** parts from Section A. Each question carries 1 mark.
- (2) Attempt any **FIVE** questions from Section B. Each question carries 4 marks.
- (3) Attempt any **TWO** questions from Section C. Each question carries 6 marks.

SECTION—A

1. (i) Organogenesis
- (ii) Clonal propagation
- (iii) Embryo rescue
- (iv) Ovule culture
- (v) Heterokaryons
- (vi) Cybrid
- (vii) Primary and Secondary metabolites
- (viii) Transgenic plants.

SECTION—B

2. Describe factors that affect micropropagation.
3. What is somatic embryogenesis ? Discuss its application.
4. Discuss microspore culture and its advantage over anther culture.
5. Comment on somaclonal variation and its importance.
6. Describe various methods of selection of heterokaryons.
7. Mention various applications of somatic cell hybridization.
8. Comment on bioreactors in production of secondary metabolites.
9. Discuss transgenic approaches in secondary metabolite production.

SECTION—C

10. Describe micropropagation and various steps involved in micropropagation.
11. Discuss the importance of haploid plants and methods of haploid plant production.
12. Write down about protoplast isolation, culture and fusion.
13. Describe *in vitro* methods for production of important secondary metabolites.