

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPF-2182

M.Sc. (Final) Examination, 2022

BOTANY

Paper - VII(d)

(Advanced Plant Biotechnology-I)

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. Answer the following questions in brief :

- (i) What is Somatic Embryogenesis ?
- (ii) What do you mean by Morphogenesis ?
- (iii) Define the concept of Micropropagation.

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- (iv) How can we obtain pathogen free plants ?
- (v) What is *in vitro* pollination ?
- (vi) How can Cybrids be produced ?
- (vii) Define the concept of Auxotrophs.
- (viii) What is Somatic Hybridization ?
- (ix) What is Protoplast ?
- (x) What do you mean by Somaclonal Variation ?

Section–B

2. Write a note on historical perspectives of plant biotechnology.

Or

Discuss in brief about the somatic embryogenesis.

3. Explain about the male haploid culture.

Or

Describe in detail about the commercial feasibility and advantages of micropropagation.

4. Explain in detail about the hybrid embryo rescue technique.

Or

Write a note on applications of somatic embryogenesis in crop improvement.

5. What is Protoplast ? How can protoplasts be isolated ? Discuss in brief.

Or

Give a note on selection and characterization of mutant cell lines.

6. Discuss in brief about the applications of plant biotechnology in crop improvement.

Or

Explain the technique of protoplast fusion in brief.

Section-C

7. Give a detailed account on organogenesis and somatic embryogenesis.
8. Write an essay on Micropropagation Technology.
9. What is *in vitro* pollination ? Give a detailed note on production of rare hybrids.
10. Differentiate between Somatic Hybridization and Cybridization. Add a note on auxotrophic mutants.
11. Discuss in detail about Somaclonal Variations.