

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BFMS-406

M.Sc. (Final) Examination, 2023

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. (i) Define Totipotency.
- (ii) What is Morphogenesis ?
- (iii) What is acclimatization ?

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- (iv) Give importance of Haploid plant production.
- (v) What are Embryoids ?
- (vi) What do you understand by embryo rescue ?
- (vii) What is male sterility ?
- (viii) What are symmetric and asymmetric hybrids ?
- (ix) How viable protoplasts are selected ?
- (x) What is protoplast culture ?

Section-B

2. What is the difference between morphogenesis and differentiation ?

Or

Describe the role of various growth regulators in organogenesis.

3. Describe anther culture in detail and give its applications.

Or

Discuss method for production of pathogen free plants through tissue culture.

4. Write a short note on *in-vitro* pollination.

Or

Describe the role of somatic embryogenesis in crop improvement.

5. How male sterility is useful in crop improvement ? Discuss in detail.

Or

What are auxotrophic mutants ? How mutant cell lines are selected ?

6. Write a short note on isolation of protoplast.

Or

Discuss the role of plant biotechnology in crop improvement.

Section–C

7. What is plant tissue culture ? Discuss its types and scope.
8. What is Micropropagation ? Discuss the various steps of micropropagation.
9. What do you understand by somatic embryogenesis ? Give different steps for process of somatic embryogenesis with suitable diagrams.
10. Differentiate between somatic hybridization and cybridization. Discuss in detail the process of cybrid production.
11. Discuss the causes and consequences of somaclonal variation in plants.