



K23P 1372

Reg. No. :

Name :

**III Semester M.Sc. Degree (C.B.S.S. – Reg./Supple./Imp.)
Examination, October 2023
(2020 Admission Onwards)
BOTANY
BOT 3E01 : Biotechnology and Bioinformatics**

Time : 3 Hours

Max. Marks : 60

Instruction : Draw diagrams wherever necessary.

SECTION – A

1. a) What is micropropagation ? What are different stages of micropropagation ?
Give an elaborate account on micropropagation technique.

OR

b) What are somatic embryos ? What are the methods applied to produce somatic embryos ?

2. a) Discuss on steps involved in DNA cloning.

OR

b) What are important restriction mapping and molecular visualization tools ?

(2×8=16)

SECTION – B

Answer **any two** :

3. a) Define differentiation and dedifferentiation.

b) What are direct and indirect organogenesis ?

c) Discuss important factors involved with organogenesis process.

(1+2+3)

4. a) What is a cybrid ?

b) What are different methods for the isolation of protoplast ?

c) What is the role of fusogens in the protoplast fusion ? Add a note on genetic consequences of protoplast fusion.

(1+2+3)

5. a) What is gene prediction ?

b) Give an account on structural databases.

c) What are important tools in sequence comparisons ?

(1+2+3)

(2×6=12)

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SECTION – C

Answer **any six** :

6. Cryopreservation

7. Synthetic seed technology

8. In vitro mutagenesis

9. In vitro fertilization and its significance

10. Production of haploid plants

11. Antisense RNA technology

12. Ex-PASI and Swiss PROT

13. Proteomics.

(6×3=18)

SECTION – D

Answer **any seven** :

14. Totipotency

15. Meristemoid

16. Hairy root culture

17. Somaclonal variations

18. Gene bank

19. Endosperm culture

20. cDNA library

21. Biolistics

22. SNP databases

23. Primer3.

(7×2=14)