

SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2021**Biotechnology****BTY 6B 13—PLANT BIOTECHNOLOGY**

Time : Three Hours

Maximum : 80 Marks

Section A*Answer any two questions.**Each question carries 10 marks.*

1. What are the techniques for ex situ conservation of germplasm ? What is cryoprotection ?
2. What are the techniques for the production and applications of haploid plants ?
3. What are technique for sterilising media components and lab ware in plant tissue culture ?
4. What are the applications of : a) Soma clones ; b) Synthetic seeds ; c) Cybrids ; and d) Meristem culture ?

(2 × 10 = 20 marks)**Section B***Answer at least seven questions.**Each question carries 5 marks.**All questions can be attended.**Overall Ceiling 35.*

5. What are the different kinds of cytokinins used in plant tissue culture ?
6. Write down the different stages of indirect organogenesis ?
7. What are the applications of transgenic plants ?
8. What are the different methods of protoplast isolation ?
9. What are the steps in the production of DH lines ? What are their applications ?
10. What are the applications of callus and cell suspension culture ?
11. What are the advantages of : a) Meristem culture ; b) Adventitious root culture.
12. What are the steps in micro-propagation ?
13. What is hairy root ? How are they formed ? What are their applications ?

Turn over

14. What are media additives ? What is their role in plant tissue culture ?
15. What are the different stages of soma clone production ?
16. What are the applications of plant tissue culture ?
17. What is the significance of auxin- cytokinin ratio in plant morphogenesis and culture ?
18. What are applications of a) Embryo rescue ; b) Nurse cells ; c) DH lines ; and d) Macerozyme.

(7 × 5 = 35 marks)

Section C

*Answer at least **three** questions.*

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 15.

19. Polyembryony.
20. Triploid plant production.
21. Binary vector system in *Agrobacterium tumefaciens*.
22. Gibberellins.
23. Alien addition and alien substitution lines.

(3 × 5 = 15 marks)

Section D

*Answer **all** questions.*

Each question carries 2 marks.

24. Hardening.
25. Poly ethelene glycol.
26. Pectinase.
27. Bt brinjal.
28. Multiple shooting.

(5 × 2 = 10 marks)