

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2017**Sixth Semester****Core Course 20—PLANT BIOTECHNOLOGY****(For B.Sc. Biotechnology)****[2013 Admission onwards]****Time : Three Hours****Maximum Marks : 80****Part A**

*Answer all questions.
1 mark each.*

1. Explant.
2. Meristem culture.
3. Cybrid.
4. Ti-Plasmid.
5. Gene bank.
6. Somaclonal variation.
7. MS medium.
8. Clones.
9. Recalcitrant.
10. Cytodifferentiation.

(10 × 1 = 10)**Part B**

*Answer any eight questions.
2 marks each.*

11. What are the enzymes used for protoplast isolation ?
12. What are the special features of protoplast culture medium ?
13. Differentiate between anther and pollen culture.
14. What is biolistics ?
15. Why iron is used in chelated form in culture medium ?
16. What is ovule culture ?

Turn over

17. What are the different stages of somatic embryogenesis ?
18. How the explants are sterilized before culture ?
19. What are elicitors ?
20. What is the difference between in vitro plants and in vivo plants ?
21. Which culture medium is used for tissue culture in trees ?
22. What is an artificial seed ?

(8 × 2 = 16)

Part C

*Answer any six questions.
4 marks each.*

23. What is the significance of haploids in plant breeding programs ?
24. In orchid culture which plant part is generally used as explants, why ?
25. How growth curve is calculated in suspension culture ?
26. What is the common carbohydrate sources added in culture medium ?
27. Comment of the merits and demerits of GM crops.
28. What is recombinant DNA technology ?
29. What is the role of tissue culture technique in germplasm conservation ?
30. Differentiate between Embryogenesis and Organogenesis.
31. Briefly give an account on the history on Plant tissue culture.

(6 × 4 = 24)

Part D

*Answer any two of the following.
15 marks each.*

32. Write down the requirements for preparing Murashige and Skoog medium. How the stock solutions are prepared ? How do you make up one liter solid culture medium for callus initiation in carrot explants ?
33. What are the different stages of micropropagation ? What are the critical parameters in each stage ?
34. Write down the steps involved in Agrobacterium mediated gene transfer in developing transgenic plants.
35. Describe the procedure for protoplast isolation and culture.

(2 × 15 = 30)