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Reg. No. :

Name :

Fifth Semester B.Sc. Degree Examination, December 2022

Career Related First Degree Programme under CBCSS

Group 2 (a) : Botany and Biotechnology

BB 1572 : PLANT BIOTECHNOLOGY

(2018 Admission)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions in a word or **one** or **two** sentences. Each question carries **1** mark.

1. Expand BAP.
2. What is dedifferentiation?
3. Define an explant.
4. Name a solidifying agent.
5. What are somaclones?
6. What is crown gall disease?
7. List any two applications of tissue culture.
8. What is organogenesis?
9. What is suspension culture?
10. Who is known as father of plant tissue culture?

(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Answer any **eight** questions. **Each** question carries **2** marks. (Answer not to exceed **one** paragraph)

11. Brief a note on Ri Plasmid.
12. What is embryo culture?
13. Comment on shoot tip culture.
14. Explain wet heat sterilization.
15. Mention the role of auxins in plant growth.
16. Name any two cytokinins.
17. Explain somatic embryogenesis.
18. Explain how virus free plants are produced?
19. What is gynogenic haploid?
20. Explain PEG mediated protoplast fusion.
21. Write any two disadvantages of *in vitro* method.
22. Explain electroporation method.
23. Comment on edible vaccines.
24. Expand IAA and NAA.
25. What is embryogenesis?
26. Discuss the role of virus in gene transfer.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. **Each** question carries **4** marks. (Answer not to exceed **120** words).

27. Explain how instruments for plant tissue culture are sterilized.
28. Describe callus culture.
29. Explain the use of plant tissue culture in the production of secondary metabolites.
30. Discuss different methods adopted for the fusion of protoplast.
31. Write any four applications of *In vitro* method.
32. Discuss the production of therapeutic proteins in transgenic plants.
33. Write the application of Ti plasmid in plant transformation.
34. Brief a note on Biopharming.
35. Explain how pest resistant plants are produced.
36. Outline the impact of transgenic plants in agriculture.
37. Explain different sterilization methods used for PTC.
38. Write the components of MS Medium.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries **15** marks. (Answer not to exceed **three** pages)

39. Describe in detail the synthesis of edible vaccines.
40. What are secondary metabolites? Explain how of PTC is used for the synthesis of secondary metabolites in large scale.

41. Explain the procedure for isolation and culturing of apical meristem. Add a note on advantages of meristem culture.
42. What is somatic hybridization? Explain how protoplasts are isolated and cultured.
43. Explain the physical and chemical methods of gene transfer.
44. What is micropropagation? Give the advantages and disadvantages of plant tissue culture.

(2 × 15 = 30 Marks)
