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(Pages : 3) U – 2738

Reg. No. : .....

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Fifth Semester B.Sc. Degree Examination, December 2024

Career Related First Degree Programme under CBCSS

Botany and Biotechnology

Vocational Course

BB 1572 — PLANT BIOTECHNOLOGY

(2019 Admission Onwards)

Time : 3 Hours Max. Marks : 80

PART – A

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

1. What are therapeutic proteins?
2. Define dedifferentiation.
3. What is embryo culture?
4. Name a solidifying agent used in plant tissue culture.
5. What is a heterokaryon?
6. Define clone.
7. What is biopharming?

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8. Define asepsis.

9. What are elicitors?

10. Mention the role of auxin in plant tissue culture.

(10 × 1 = 10 Marks)

PART – B

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

11. Write the use of Laminar Air Flow.

12. What is the advantage of meristem culture?

13. Discuss the benefits of edible vaccines.

14. Explain different types of callus.

15. How haploids are produced in tissue culture?

16. Brief a note on glyphosate resistance in plants.

17. List the factors affecting secondary metabolite production in plants.

18. What are the advantages of genetically modified cotton?

19. Mention the significance of golden rice.

20. Define totipotency.

21. What are somatic hybrids?

22. What is the function of cry protein?

(8 × 2 = 16 Marks)

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PART – C

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

23. Discuss various sterilization methods used in plant tissue culture.
24. What are the types of cell suspension culture?
25. Comment on Flavr Savr tomato.
26. What is somatic embryogenesis? What is its significance?
27. Why is *Agrobacterium* used for transformation?
28. What is protoplast culture? List its applications.
29. Brief a note on viral vectors for plant genome engineering.
30. Discuss the production of therapeutic proteins in transgenic plants.
31. List the advantages of synthetic seeds.

(6 × 4 = 24 Marks)

PART – D

Answer **any two** questions. Each question carries **15** marks. (Answer not to exceed **3** pages).

32. Discuss production of secondary metabolites from plants by hairy root culture.
33. Define culture media. Write the general composition and preparation of tissue culture media.
34. What are somaclonal variations? How is it produced? Discuss its applications in horticulture.
35. Explain the vectorless methods of gene transfer in plants.

(2 × 15 = 30 Marks)

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