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Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2023

First Degree Programme under CBCSS

Botany

Elective Course

BO 1661 : BIOTECHNOLOGY AND NANOBIOTECHNOLOGY

(2019 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Very short answer questions (**One** word to minimum of **two** sentences).
Answer **all** questions. Each question carries **1** mark

1. MS medium.
2. What is protoplast culture?
3. What is somatic embryogenesis?
4. Define nanotechnology.
5. What are edible vaccines?
6. What is microinfection?
7. Which is the highly heat stable enzyme used in PCR?
8. What are vectors?

9. What are Dendrimers?

10. Who is the father of plant tissue culture?

(10 × 1 = 10 Marks)

SECTION – B

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

11. Write a short note on suspension culture.

12. What is differentiation?

13. What are cybrids?

14. What are nif genes?

15. What is the composition of LB media?

16. What is callus?

17. What are carbon nano tubes?

18. What is SCP?

19. What is Bt Cotton?

20. Describe shot gun method.

21. What are primers used in PCR?

22. Briefly explain the Southern blotting technique.

(8 × 2 = 16 Marks)

SECTION – C

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

23. Describe mechanism of gene replication in Flavr savr tomato.

24. Explain isolation and purification of DNA from plant cell.

25. Explain RFLP.

26. Explain the different methods of production of haploids in tissue culture.

27. Explain the sterilization of explants and equipment's in tissue culture.

28. Differentiate plasmids, cosmids and phagemids.

29. Describe the method of production of edible vaccines from plants.

30. Describe the application of Nano technology in life science.

31. Explain the production of alcohol and vinegar using biotechnological method.

(6 × 4 = 24 Marks)

SECTION – D

Long essay. Answer any **two** questions. **Each** question carries **15** marks.

32. Write an essay on the various applications of biotechnology, with special reference to environmental pollution.

33. Briefly explain Agarose Gel Electrophoresis.

34. Write an essay on components of tissue culture laboratory.

35. Briefly describe recombinant DNA technology.

(2 × 15 = 30 Marks)