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### QP CODE: 25019647

Reg No	:	
Name	:	

# B.Sc DEGREE (CBCS) ) REGULAR/ IMPROVEMENT/ REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

## **Fourth Semester**

B.Sc Botany Model II Plant Biotechnology

## Vocational Course - BO4VOT32 - PLANT TISSUE CULTURE

2017 Admission Onwards

527E1142

Time: 3 Hours

Max. Marks : 60

### Part A

Answer any **ten** questions. Each question carries **1** mark.

- 1. What is totipotency?
- 2. What is 2,4-D?
- 3. How can you inoculate an explant for plant tissue culture?
- 4. Which type of callus is most suitable for suspension culture?
- 5. What is meristem culture?
- 6. What do you meant by caulogenesis?
- 7. What is embryogenesis?
- 8. What is protoplast?
- 9. Name any one chemical which helps in the fusion of protoplast.
- 10. A researcher is using a filterpaper over a callus to culture a single cell. Which technique is used here for culturing?
- 11. Which culture uses microchamber technique?
- 12. What are called elicitors?

 $(10 \times 1 = 10)$ 

Part B

Answer any **six** questions. Each question carries **5** marks.

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- 13. What is the method for isolation of shoot tip from a plant for culturing?
- 14. Briefly explain the importance and significance of callus culture.
- 15. Briefly explain anther culture procedure with a neat diagram.
- 16. Write a short note on cytodifferentiation.
- 17. Briefly explain the importance of somatic embryogenesis.
- 18. Write a short note on various techniques of protoplast culture.
- 19. Write a short note on the applications of cybrids.
- 20. Briefly explain somaclonal variation.
- 21. Explain briefly various types of bioreactors.

(6×5=30)

#### Part C

## Answer any **two** questions. Each question carries **10** marks.

- 22. Explain the details of a basic plant tissue culture laboratory mentioning the equipments and laboratory organisation.
- 23. Write an essay on the plant tissue culture medium.
- 24. Write an essay on the different single cell culture techniques and its applications.
- 25. Explain in detail how planr tissue culture techniques can be exploited for practical uses.

(2×10=20)