

Reg. No

Name

18P432

M Sc DEGREE END SEMESTER EXAMINATION - MARCH 2018
SEMESTER 4 : BOTANY
COURSE : 16P4BOTT15; TISSUE CULTURE AND MICROBIAL BIOTECHNOLOGY
(For Regular - 2016 admission)

Time : Three Hours

Max. Marks: 75

Section A
Answer any 8 (2 marks each)

1. Glass goods are mostly used in tissue culture. Why?
2. What is chemically defined medium?
3. Why are all cells not totipotent in culture?
4. Differentiate between caulogenesis and rhizogenesis.
5. Discuss the reasons of somaclonal variation.
6. State the importance and implication of anther and pollen culture.
7. What is coculture method of protoplast?
8. What is batch fermentation?
9. What are the methods used for tissue engineering?
10. How nature of plant material is significant in cryopreservation?
11. List out the advantages of hairy root culture.
12. What are primary and secondary plant metabolites?

(2 x 8 = 16)

Section B
Answer any 7 (5 marks each)

13. Briefly explain various conditioning factors regulating somatic embryogenesis.
14. Briefly explain the significance of organogenesis in genetics and plant breeding.
15. Discuss the applications of somaclonal variation.
16. What are the advantages of pollen culture over anther culture?
17. Enumerate the protocol for isolation and culture of protoplast.
18. Discuss the methods and applications of regenerative medicine.
19. Give an account on achievements of enzyme engineering.
20. Write a short note on *in vitro* plant germplasm conservation.
21. Explain the stages in mass culture of plant cells in a bioreactor.
22. Write a note on hairy root culture. Mention its applications.

(5 x 7 = 35)

Section C
Answer any 2 (12 marks each)

23. Write an essay on various factors affecting somatic embryogenesis.

OR

24. How haploids are produced in tissue culture? Mention the significance of haploids.
25. What are bioreactors ? Write an account on various types of bioreactors.

OR

26. Write an essay on significance and applications of plant germplasm conservation with special reference to the techniques used.

(12 x 2 = 24)