



QP CODE: 26019201



26019201

Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, MARCH 2026

Fourth Semester

M Sc BOTANY

ELECTIVE - BY800401 - PLANT TISSUE CULTURE AND MICROBIAL BIOTECHNOLOGY

2019 Admission Onwards

E673C858

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Explain indirect regeneration.
2. What is embryo rescue?
3. What are macerozymes?
4. What is the contribution of Guha and Maheswari in plant tissue culture?
5. What is the contribution of S.S. Bhojwani in plant tissue culture?
6. What are the culture conditions responsible for secondary metabolite production?
7. What is biotransformation?
8. What is a rotary drum bioreactor? What is its speciality?
9. Give two examples for amylase producing bacterial strains.
10. What are the essential components required for microbial bioremediation.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Give an account on the reasons for somaclonal variations.





12. Describe the various methods used for protoplast fusion.
13. Explain the applications of protoplast culture.
14. Describe the applications and limitations of haploid plants.
15. Discuss various methods of enzyme immobilization.
16. What is downstream processing? Explain.
17. Discuss rhizobial inoculants as biofertilizers.
18. Describe bioleaching with an example.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Compare and contrast embryogenesis in somatic and zygotic embryos.
20. Describe the various in vitro methods for germplasm conservation.
21. What is penicillin? Mention different types and how it can be produced on a commercial scale using fermentation technology.
22. Give a detailed account on tissue engineering in regenerative medicine with examples.

(2×5=10 weightage)

