

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
MARCH 2021**

Microbiology

MBG 6B 15 (E1)—CELL AND TISSUE CULTURE

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Section A (Objective/One word)

*Answer all questions.
Each question carries 1 mark.*

1. What is a clone ?
2. What is an explant ?
3. Name a surface sterilant used in tissue culture.
4. What is BAP ?
5. What are haploid plants ?
6. Which culture method is ideal for the production of virus free plantlets ?
7. Name a chemical fusogen used in somatic hybridization.
8. What are synseeds ?
9. What is the application HEP A filter ?
10. What is a callus ?
11. What are pluripotent stem cells ?
12. What are stem cell markers ?

(12 × 1 = 12 marks)

Section B (Short Answer Questions)

*Answer at least eight questions.
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 24.*

13. What is the difference between dedifferentiation and redifferentiation ?
14. What is EDTA ? Why is it added in tissue culture medium ?

Turn over

15. Write a brief account on the effect of auxin/cytokinin ratio on organ formation.
16. Tissue culture is sometimes referred to as in-vitro culture technique. Why ?
17. Why is sub-culturing essential in tissue culture ?
18. What are friable callus? What is the use of friable callus ?
19. What is the importance of autoclaving culture media ?
20. What is biolistic method of gene transfer ?
21. What is micropropagation ? Why is it successful in plants ?
22. What is the role of elicitors in secondary compound production ?

(8 × 3 = 24 marks)

Section C (Short Essay Questions)

Answer at least five questions.

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

23. Write a brief account on human embryonic stem cell culture.
24. What is MS medium ? Mention the role of hormones in the medium ?
25. What are the strategies for the enhanced production of secondary metabolites in tissue culture ?
26. Write a short note on cell suspension culture and its applications.
27. Make a comparison of direct and indirect organogenesis.
28. How are somaclonal variants important in crop improvement programmes ?
29. How do somatic embryos different from zygotic embryos ?
30. Write a short note on the applications of cell lines in medical field.

(5 × 6 = 30 marks)

Section D (Essay Questions)

Answer at least one questions.

Each question carries 14 marks.

31. Write a detailed account on the applications of tissue culture.
32. What is somatic hybridization ? Give a detailed account on the methodology and applications of somatic hybridization.
33. Explain the steps involved in micropropagation technique.

(1 × 14 = 14 marks)