

**SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2019****(CUCBCSS)****Microbiology****MBY 6B 18 (E1)—CELL AND TISSUE CULTURE****Time : Three Hours****Maximum : 80 Marks****Section A***Answer all the **twelve** questions.*

1. The excised piece of leaf or stem tissue used in micropropagation is \_\_\_\_\_.
2. The plant regulatory hormone is \_\_\_\_\_.
3. A hybrid cell produced by introducing nuclear material into a cell is called \_\_\_\_\_.
4. The cell theory was proposed by \_\_\_\_\_.
5. The plants exists in polyploidy state during meiosis are called \_\_\_\_\_.
6. The synthetic seed is produced by encapsulating somatic embryo with \_\_\_\_\_.
7. The unorganized proliferative mass of cells produced from plant cells \_\_\_\_\_.
8. The method of transferring genetic material into target is called \_\_\_\_\_.
9. Example for conventional cryoprotectant used in tissue culture \_\_\_\_\_.
10. The actively growing and dividing cells in a sample are called \_\_\_\_\_.
11. The culturing of cells in liquid agitated medium is called \_\_\_\_\_.
12. The vector used in crop improvement is \_\_\_\_\_.

**(12 × ½ = 6 marks)****Section B***Answer all **ten** questions in one **or** two sentences.*

13. What is secondary metabolite of plants ?
14. What are protoplast fusion methods ?
15. Comment on growth kinetics of cells in culture.
16. What is clonal propagation ?

**Turn over**

17. What is organogenesis ?
18. Comment on dye exclusion method for cell viability.
19. Comment on growth regulators.
20. What is the importance of molecular markers ?
21. What are the different media used for plant tissue culture ?
22. What is the significance of anther culture ?

(10 × 2 = 20 marks)

### Section C

*Answer briefly any **six** questions.*

23. Discuss the physico chemical properties of culture media.
24. What is cell suspension culture ? Explain the growth phases of cells in cell suspension Culture.
25. Describe the production of pathogen free haploid plants.
26. Comment on the production of seedless plant.
27. Briefly discuss the ethical aspects of animal cloning.
28. Write the importance of meristem culture.
29. Explain induction and development of somatic embryoids.
30. What is meant by somaclonal variation ? Explain its genetic basis.

(6 × 5 = 30 marks)

### Section D

*Answer any **two** questions in detail.*

31. Explain the steps involved in cryopreservation and its importance.
32. Describe stem cell culture, characterization and its application.
33. Describe the concept of cell lines. Discuss the various types of cell lines and its applications

(2 × 12 = 24 marks)