

SIXTH SEMESTER B Sc DEGREE EXAMINATION, MARCH 2014
(UG - CCSS)

Microbiology
(Elective Course)

MB 6B 21 (E2) – CELL AND TISSUE CULTURE

Time: Three hours

Maximum: 30 Weightage

Part A

(Answer all questions)

1. Protoplasts can be produced from callus by enzymatic treatment with
 - a) cellulolytic enzymes
 - b) pectolytic enzymes
 - c) both a and b
 - d) proteolytic enzymes
2. is an excised piece of leaf or shoot used in micro propagation
 - a) micro shoot
 - b) explant
 - c) medium
 - d) callus
3. Protoplast is the cell lacking
4. Organogenesis is
5. In a callus culture:
 - a) increasing the level of cytokinin induce shoot formation
 - b) increasing the level of cytokinin induce root formation
 - c) increasing the level of auxin induce shoot formation
 - d) none of these
6. The ability of a cell to produce the whole plant is called
7. Autoclave is used for
- I. Vectors DNA is used for
- a. A chemical used for surface sterilization is
10. Haploid cells contain set of chromosomes

Expand the following

11. MS medium
12. ABA

(12x $\frac{1}{4}$ = 3 Weightage)

Part B

(Write briefly on the following)

13. Callus
14. Protoplast fusion
15. Gibberellins

Turn over

16. Stem cell
17. Synthetic seeds
18. Membrane filters
19. Animal cell culture media
20. Cell lines
21. Cell marker

(9 x 1 = 9 Weightage)

Part C

*Write notes on any five of the following.
Answer not to exceed one page*

22. Maintenance of sterile condition
23. Pollen culture
24. Explant selection
25. Somatic hybrids
26. Media formulation
27. Cell suspension culture
28. Indirect gene transfer

(5 x 2 = 10 Weightage)

Part D

Write briefly on any two of the following

29. Stem cell culture and its applications
30. Somaclonal variation and its application in crop improvement
31. Basic lab requirements and applications of tissue culture

(2 x 4 = 8 Weightage)