

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
(For candidates admitted from the academic year 2004-2005 & thereafter)

**SUBJECT CODE: BT/MC/AB64**

**B.Sc. DEGREE EXAMINATION, APRIL 2010**  
**BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**  
**SIXTH SEMESTER**

**COURSE : MAJOR – CORE**

**PAPER : APPLIED BIOTECHNOLOGY**

**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION –A**

**ANSWER ALL QUESTIONS**

**(18 x 1 = 18 )**

**I. FILL IN THE BLANKS**

1. Anther culture results in the production of \_\_\_\_\_.
2. *Azolla* is used as a \_\_\_\_\_.
3. The substances that react with the products of a specific immune response is called \_\_\_\_\_.
4. \_\_\_\_\_ reported the direct development of haploid embryos and plantlets from microspore of *Datura innoxia*.
5. The direct delivery of the therapeutic gene into the target cells of a particular tissue of a patient constitute \_\_\_\_\_.

**II. MATCH THE FOLLOWING**

- |                    |   |                                     |
|--------------------|---|-------------------------------------|
| 6. White's medium  | - | Anther culture                      |
| 7. M S medium      | - | Protoplast culture / callus culture |
| 8. B 5 medium      | - | Root culture                        |
| 9. Nitsch's medium | - | Organogenesis                       |

**III. STATE WHETHER TRUE OR FALSE:**

10. Protoplasts are naked plant cells without the plasma membrane.
11. RNA is the genetic material in retrovirus.
12. A technique popularly known as hybridoma technology is employed to produce monoclonal antibodies in specialized cells.
13. *Bacillus thuringiensis* is a gram negative soil bacterium.
14. The diazotrophic microorganisms are the symbiotic nitrogen fixers.

**IV. CHOOSE THE CORRECT ANSWER**

15. nif genes were first discovered in  
a) *Klebsiella* b) *Bacillus* c) *E. coli* d) *Streptococcus*
16. Which is a natural herbicide?  
a) Glyphosate b) Phosphinothricin c) Mercuric chloride  
d) Ethyl methane sulphonate
17. Potential raw material of alcohol production is  
a) Sweet Potato b) Tomato c) carrot d) Radish
18. Modified viral vectors are  
a) Adenovirus b) Herpes virus c) Oncoretrovirus d) All the three.

**V. ANSWER ANY SIX OF THE FOLLOWING. EACH ANSWER NOT TO EXCEED 50 WORDS: (6 x 3 = 18)**

19. Explant
20. Cybrid
21. Gene therapy
22. Xenobiotics
23. Sillages
24. Bt toxin
25. G M plants
26. Haptens
27. Interferons

**SECTION- B**

**ANSWER ANY FOUR OF THE FOLLOWING. EACH ANSWER NOT TO EXCEED 200 WORDS: (4 x 6 = 24)**

28. Explain somatic hybridization.
29. Give an account of mode of action of Cry protein.
30. What is gene cloning? Give the ethical issues related to gene cloning.
31. Discuss Ex vivo gene therapy.
32. Write a detailed account on Vaccines.
33. Give an account of Organogenesis.

**SECTION -C**

**ANSWER ANY TWO OF THE FOLLOWING. EACH ANSWER NOT TO EXCEED 1000 WORDS: (2x 20 = 40)**

34. Describe the isolation and culture of Protoplast.
35. Write an essay on Biofertilisers? Bring out the benefits of biofertilizers.
36. Discuss the methods employed to produce ethanol by using microorganisms.
37. Briefly describe the steps involved in the production of monoclonal antibodies.

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