

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI –600 086
(For candidates admitted during the academic year 2006-07 & thereafter)

SUBJECT CODE: BY/PC/PB24

M. Sc. DEGREE EXAMINATION, APRIL 2008
BIOTECHNOLOGY
SECOND SEMESTER

COURSE : MAJOR CORE
PAPER : PLANT BIOTECHNOLOGY
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ANY ALL QUESTIONS

(1 x 20 = 20)

1. Differentiate between dedifferentiation and redifferentiation.
2. Mention the enzymes used for protoplast isolation, along with their source.
3. What are the reasons for somoclonal variations in plants?
4. Expand ICP and mention its source.
5. What is the concept behind androgenesis?
6. Write a short note on hairy –root disease.
7. List down the advantages of electroporation.
8. What are GFPs? How are they advantageous over GUS assay in plants?
9. What is the significance of lectin gene?
10. What are satellite RNAs?
11. Give the importance of PR proteins in plants.
12. List down the effects of water deficit in plants.
13. Why is Golden rice yellow or orange in colour?
14. What is the significance of PHAs in plant biotechnology?
15. Name the two most commonly used plants for the production of edible vaccines.
16. What is ELSI?
17. What do you know about molecular breeding?
18. Write a note on 30S promoter of CAMV.
19. Define totipotency.
20. What are cybrids?

SECTION – B**ANSWER ANY FOUR QUESTIONS IN ABOUT 600 WORDS (4 x 10 = 40)**

21. What are the explants that could be used for callus culture? What are the factors affecting callus culture?
22. Describe the isolation of protoplasts by both mechanical and enzymatic methods. Also, add a note on protoplasmic fusion.
23. Write about the types of somatic embryogenesis. Add a note on artificial seed production.
24. How will you introduce 'disease resistant genes' in food crops?
25. Differentiate between the two types of Ti plasmid-derived vectors, cointegrate and binary vectors.
26. Describe any two genetically engineered herbicide resistant crops and its impact on environment.

SECTION – C**ANSWER ANY TWO QUESTIONS IN ABOUT 1500 WORDS (2 x 20 = 40)**

27. Write an essay on the PTC media, focusing on the composition, significance of each constituent and commonly used media for specific purposes.
28. 'Agrobacterium is the nature's most effective plant genetic engineer' – substantiate this statement throwing light upon the organization of Ti plasmid, signal induction and production of virulence proteins.
29. How are genetically modified plants manipulated to act as bioreactors to produce a wide variety of biologically important compounds? Also, add a note on 'Plantibodies'.
30. Write in detail about Molecular farming and its applications.
