



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc., DEGREE EXAMINATION – PLANT BIOLOGY & BIOTECH.

FIFTH SEMESTER – NOVEMBER 2013

PB 5518/PB 5512/PB 5504 – PLANT BIOTECHNOLOGY

Date : 12/11/2013
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer the following, each within 50 words only:

(10 x 2 = 20 marks)

1. What is an explant?
2. Define aseptic condition.
3. What is immobilization?
4. Define Totipotency.
5. What is the role of *nif* genes?
6. Write about Ti plasmids.
7. What is cDNA?
8. Define microinjection.
9. What is GUS?
10. Mention the importance of *Bacillus thuringiensis*.

PART – B

Answer the following, each within 500 words.

Draw diagrams wherever necessary:

(5 x 7 = 35 marks)

11. a) Describe the various sterilization methods used in tissue culture.
(or)
b) Enumerate the history and scope of plant tissue culture.
12. a) Explain the procedure for another culture.
(or)
b) Give an account on soma clonal variation.
13. a) Write an account on Mitochondrial Genome.
(or)
b) Discuss the molecular interaction of *Rhizobium* and leguminous plants.
14. a) Describe the technique and purpose of Southern blotting.
(or)
b) Write notes on restriction enzymes.
15. a) Give a brief account of herbicide resistant crops through genetic engineering.
(or)
b) What are selectable markers? Explain.

PART – C

Answer any **THREE** of the following, each within 1200 words.

Draw diagrams wherever necessary:

(3x15=45 marks)

16. Explain the post transcriptional & translation modifications in Eukaryotes.
17. What is cryopreservation? Describe the procedure and applications of Cryopreservation for storage of germplasm.
18. Explain the methods of isolation and fusion of protoplasts.
19. Describe *Agro bacterium* mediated gene transfer method.
20. Write notes on RFLP & RAPD. Add a note on its significance in crop improvement.

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