

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

FIFTH SEMESTER – APRIL 2016

PB 5518/5512/5504 – PLANT BIOTECHNOLOGY

Date: 30-04-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

PART – A

(10 x 2 = 20 marks)

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS ONLY.

01. Define callus.
02. What is Acclimatization?
03. Comment on cryopreservation.
04. What do you mean by synthetic seeds?
05. What are *nif* genes?
06. Write notes on *Agrobacterium tumefaciens*
07. Define electroporation.
08. Mention the role of cloning vectors.
09. Write on Polymerase Chain Reaction.
10. Expand RFLD & RAPD.

PART – B

(5 x 7 = 35 marks)

**ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS.
DRAW DIAGRAMS WHEREVER NECESSARY.**

- 11a. Explain the history and scope of Plant tissue culture.
(OR)
b. Write an account on the various methods of sterilization.
- 12a. Write notes on protoplast fusion.
(OR)
b. What is Somaclonal Variation? Explain.
- 13a. Describe the organization of mitochondrial DNA.
(OR)
b. Discuss the interaction of *Rhizobium* with leguminous plants.
- 14a. Write a brief account on restriction enzymes.
(OR)
b. Give an account on Western blotting.
- 15a. Explain in detail about the development of transgenic plants resistant to herbicides.
(OR)
b. Describe the process of DNA finger printing.

**ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS.
DRAW DIAGRAMS WHEREVER NECESSARY.**

16. Write an account on the types of culture media.
17. Explain in detail anther and embryo culture.
18. Describe the *Agrobacterium* mediated gene transfer.
19. Write a detailed account on:
 - (i) Cytoplasmic male sterility
 - (ii) Organization of Ti plasmids.
20. Write an account on the crop improvement with respect to yield and quality.

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