LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **PLANT BIOLOGY & PLANT BIO-TECH.**

FIFTH SEMESTER – NOVEMBER 2012

# PB 5518/5512/5504 - PLANT BIOTECHNOLOGY

 Date : 08/11/2012 Dept. No. Max. : 100 Marks

 Time : 9:00 - 12:00

**PART – A**

**ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS: (10 x 2 = 20 marks)**

01. Define callus.

02. What is an explant?

03. What is a cybrid?

04. Define vector.

05. What are *nod* genes?

06. Distinguish between intron and exons.

07. Mention the role of Restriction endonuclease Type II.

08. Define microinjection.

09. Write notes on RAPD.

10. What is Bt-gene?

**PART – B**

**ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS.**

**DRAW DIAGRAMS, FLOWCHARTS WHEREVER NECESSARY: (5 x 7 = 35 marks)**

11. a) Enumerate the importance of Plant tissue culture.

 **(OR)**

 b) Give a brief account on the methods of sterilization.

12. a) How are artificial seeds produced under in vitro condition?*.*

 **(OR)**

 b) Write notes on cryopreservation.

13. a) Describe the structure and organization of chloroplast DNA.

 **(OR)**

 b) Write an account on the genetic organization of Ti plasmids.

14. a) Briefly explain Polymerase Chain Reaction.

 **(OR)**

 b) Write short notes on

 (i) Cloning vectors

 (ii) Genomic library

15. a) Give an account on DNA finger printing.

 **(OR)**

 b) Write notes on importance of molecular markers in genome mapping.

**PART – C**

**ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS.**

**DRAW DIAGRAMS, FLOW CHARTS WHEREVER NECESSARY: (3 x 15 = 45 marks)**

16. Write an account on callus culture and mention its significance.

17. Give an illustrated account of Isolation and fusion of protoplasts.

18. Describe the molecular interaction of *Rhizobium* with leguminous plants.

19. Write an essay on *Agrobacterium* mediated gene transfer.

20. Describe the development of transgenic plants with reference to insect resistance.

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