

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



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

FIFTH SEMESTER – APRIL 2018

PB 5518 / PB 5504 – PLANT BIOTECHNOLOGY

Date: 17-04-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART A

Answer the following, each within 50 words:

(10 x 2 = 20marks)

1. Define explant.
2. Define callus.
3. What are somoclonal variations?
4. Define cybrid.
5. What are *nif* genes?
6. Define *Ti*-plasmid.
7. What are restriction enzymes?
8. Define molecular probe?
9. Expand RFLP and mention its importance.
10. What are transgenics?

PART B

Answer the following, each within 500 words. Draw diagrams and flowcharts wherever necessary:

(5 X 7 = 35marks)

11.a. List out the importance of plant tissue culture

(OR)

b. Write the composition of MS medium. Add a note on the role of hormones in tissue culture

12.a. Explain the steps involved in cryopreservation.

(OR)

b. How are artificial seeds produced under *in vitro* conditions.

13.a. Explain the structure and organization of mitochondrial DNA

(OR)

b. Give a brief note on genetic organization of *Ti*-plasmids

14.a Explain the steps involved in PCR and mention its applications.

(OR)

b. Write short notes on genomic library

15.a Explain briefly about RAPD and its applications.

(OR)

b. Write the importance of molecular markers in genomic mapping.

PART C

Answer any three of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary: (3 X 15 = 45marks)

16. Write an essay on types of sterilization used in plant tissue culture.

17. Illustrate the steps involved in isolation and fusion of protoplasts.

18. Explain the mechanisms involved in transformation of plants by *Agrobacterium tumefaciens*

19. Explain the different types of blotting techniques?

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