

LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034



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

FIFTH SEMESTER – NOVEMBER 2024

PB 5518 – PLANT BIOTECHNOLOGY



Date: 14-11-2024

Dept. No.

Max. : 100 Marks

Time: 09:00 am-12:00 pm

SECTION A

Answer ANY FOUR of the following, each within 500 words.

Draw diagrams / flowcharts wherever necessary. $4 \times 10 = 40$ Marks

1. Explain the sterilization techniques used in plant tissue culture.
2. Enumerate the significance of meristem and callus culture.
3. Discuss the post-transcriptional and translational modifications.
4. Give a brief account on Restriction enzymes and Electrophoresis.
5. How are genes amplified using PCR?
6. Write notes on Blotting techniques.
7. Briefly explain the steps involved in genetic engineering.
8. Discuss the biosafety measures followed in Biotech laboratories.

SECTION B

Answer ANY THREE of the following, each within 1000 words.

Draw diagrams / flowcharts wherever necessary. $3 \times 20 = 60$ Marks

9. Write detailed notes on soma clonal variations.
10. Elaborate on the production of somatic hybrids under *in vitro* conditions.
11. Explain the genetic organization and function of the chloroplast genome.
12. Explain the physical methods of gene transformation.
13. Discuss the genetic organization of *Ti* plasmid. Add a note on its importance in transgenic production.
14. Give an account on molecular markers.

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