

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



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

SIXTH SEMESTER – APRIL 2019

16UPB6MS01– PLANT BIOTECHNOLOGY

Date: 02-04-2019
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

Part A

Answer the following, each within 50 words

(10 x 2 = 20 marks)

1. Define nuclear genome.
2. What are episomes?
3. Define molecular probe.
4. What is a primer?
5. Distinguish between Ti and Ri plasmid.
6. What is pBR 322?
7. Define Androgenesis
8. Mention the importance of micropropagation.
9. What are molecular markers?
10. Mention any two commercial products of genetically modified organisms and their significances.

PART B

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

(5 x 7 = 35 marks)

11a. Explain the genetic organization and function of chloroplast genome.

OR

b. Mitochondria is a semiautonomous organelle - Justify

12a. Write notes on restriction enzymes and Agarose gel electrophoresis.

OR

b. Give a brief account on DNA sequencing by Sangers method.

13a. Describe the genetic structure and function of Ti plasmid.

OR

b. Explain the physical methods of plant gene transformation.

14a. Write notes on soma clonal variations.

OR

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

15a. Explain the steps involved in RFLP. Add note on its significance.

OR

b. Briefly enlist the biosafety procedure followed during transgenic production.

PART C

Answer any three of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary. (3 x15 = 45 marks)

16. Explain the post transcriptional and translational modifications.

17. Explain the steps involved in polymerase chain reaction.

18. Give an account on *Agrobacterium tumefaciens* and its importance in Plant Biotechnology.

19. Write an essay on somatic hybridization.

20. Elaborate on the production of insect resistant transgenic cotton plant.
