

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



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

SIXTH SEMESTER – APRIL 2022

UPB 6501 – PLANT BIOTECHNOLOGY

Date: 15-06-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

PART - A

Answer the following, each within 50 words

(10 × 2 =20 Marks)

1. Explain acclimatization.
2. Define totipotency.
3. Differentiate nuclear and chloroplast genome.
4. What are nif genes?
5. List the uses of restriction enzymes.
6. Mention the steps of construction of cDNA library.
7. Give the components of Ti plasmid.
8. State the significance of marker genes in gene transformation.
9. Comment on transgenic plants.
10. What are plantibodies?

PART - B

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

(5 ×7 = 35 Marks)

11. a. Give an account on different types of media used in plant tissue culture.
(or)
b. Write short notes on somaclonal variation.
12. a. Discuss the structure and expression of chloroplast genome.
(or)
b. How does *Rhizobium* interacts with the legume plants at molecular level.
13. a. Define vector. Write a note on pBR322.
(or)
b. Give an account on Southern blotting technique.
14. a. Write briefly about *Agrobacterium* mediated gene transfer.
(or)
b. Explain various physical methods of gene delivery system.
15. a. Discuss the role of IPR in plant biotechnology.
(or)
b. Explain molecular markers and their applications.

PART - C

Answer any three of the following, each within 1200 words.

Draw diagrams and flowcharts wherever necessary.

(3 ×15 = 45 Marks)

16. Describe the methods of protoplast isolation, fusion and culture.
17. Write in detail about transcription. Add a note on post-translational modifications.
18. Describe the Polymerase chain reaction technology. Add a note on its applications.
19. Explain the genetic structure and molecular mechanism involved in transfer of T- DNA into plants.
20. Elaborate on the production of insect and herbicide resistant transgenic plants.

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