

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – ADVANCED ZOOLOGY AND BIOTECHNOLOGY

FOURTH SEMESTER – APRIL 2023

UPB 4401 – PLANT BIOTECHNOLOGY AND BIOSTATISTICS

Date: 04-05-2023

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

Part A

Answer the following, each within 50 words

(10 x 2 = 20 marks)

1. Define totipotency.
2. Describe callus.
3. What is genetic engineering?
4. Describe the two types of gene library.
5. Mention microinjection method of gene transfer.
6. What are marker genes?
7. Describe primary data.
8. Define mean.
9. What is a Chi-Square Test?
10. Expand and explain SPSS.

PART B

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

(5 x 7 = 35 marks)

11a. What are the roles of plant growth hormones in *in vitro* culture?

or

b. How are the artificial seeds synthesized?

12a. Write down the principle, procedure and importance of SDS-PAGE.

or

b. Give an account of southern blotting technique and its applications.

13a. Present an outline of particle bombardment method.

or

b. Describe the promoter genes in Plant Transformation.

14a. Give a brief account on the presentation of data.

or

b. Compare median with mode.

15a. Describe population with its types.

or

b. Present a brief summary of Microsoft Excel.

PART C

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

16. Present the various components of culture media composition.
17. Give a detailed account on restriction enzymes.
18. Present a detailed account on Agrobacterium-mediated gene transfer (AMGT) in Plants.
19. Write on mean deviation and standard deviation with suitable examples.
20. Illustrate probability and highlight different methods of probability.

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