Date: 12-05-2023   Dept. No.   Max. : 100 Marks
Time: 09:00 AM - 12:00 NOON

PART A   (10 × 2 = 20 Marks)

Answer the following, each within 50 words.

01. Distinguish between codon and anticodon.

02. Mention the sequence of promoter site.

03. What are restriction enzymes?

04. Define genomic library.

05. What is T-DNA?

06. Mention any four vectors used in plant biotechnology.

07. What are somaclones?

08. Distinguish between hybrid and cybrid.

09. Expand RAPD. Mention its importance.

10. Define plant molecular farming.

PART B   (5 × 7 = 35 Marks)

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

11 a) Describe the genetic organization and function of mitochondrial genome.

OR

b) Explain the post transcriptional and post translational modifications.

12 a) Explain any two molecular tools used in genetic engineering.

.   OR

b) Explain the steps involved in r-DNA technology.

13 a) Write notes on selectable markers and reporter genes.

OR

b). Explain the physical methods of gene transformation.

14 a) What is callus? Explain the types of callus and their importance.

OR

b) Explain the various sterilization techniques used in plant tissue culture.

15 a) Write notes on plantibodies.

OR

b) Give a brief account on Biosafety and Bioethics followed in transgenic production.

*Answer **any three** of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary.*

16. Explain in detail about the expression of plant nuclear genome.

17. Write notes on Polymerase Chain Reaction.

18. Explain the structure and function of Ti plasmid.

19. How are artificial seeds produced under *in vitro* condition? Add a note on its significance.

20. Explain the importance of any two markers used in crop improvement programmes.

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