

Roll No.

Total Pages : 3

MDQ/D-23

5226

**PLANT BIOTECHNOLOGY & GENETIC
ENGINEERING**

Paper–BOT–303

Time allowed : 3 Hours]

[Maximum Marks : 80

Note : Attempt **five** questions in all, selecting **one** question from each unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. Attempt all questions: 8×2=16
- (i) Brief note on RAPD.
 - (ii) State briefly the purpose of DNA chip technology.
 - (iii) Name major molecular techniques for studying genomics.
 - (iv) Name any four vectors and compare their cloning capacities.
 - (v) What is DNA finger printing.
 - (vi) What are plantibodies?
 - (vii) What is biomagnification?
 - (viii) What is the use of Ethidium bromide?

UNIT–I

- 2. (a) What is the purpose and major steps in western blotting technique. 8
- (b) Depict the design and functioning of an automatic DNA sequencer. 8
- 3. What is PCR? Discuss the functioning and the key factors that influence PCR. 16

UNIT–II

- 4. What are different vectors for gene cloning? Explain BAC, YAC and MAC and their advantages in gene cloning. 16
- 5. (a) Differentiate between natural and synthetic plasmids with examples. 8
- (b) Outline the strategy for making a mouse genomic library. 8

UNIT–III

- 6. (a) Outline the steps of Agrobacterium mediated genetic transformation of plants. 8
- (b) Write the merits and demerits of particle gun bombardment. 8
- 7. (a) Outline the strategy for the development of virus resistant plants. 8
- (b) What are the common abiotic stresses and state their adverse effects on plants. 8

UNIT-IV

8. (a) Write in detail the procedure for the production of yeast and algal biomass on mass scale. 8
- (b) Give a brief account of fermented products and discuss their importance. 8
9. (a) Write a detailed note on the in situ and ex situ bioremediation giving suitable examples. 8
- (b) Give a detailed note on the plant derives biopesticides and their application. 8