

(Printed Pages 4)

SG-16908

(544) M.Sc. Botany (Fourth Semester)

Examination, June-2024

Compulsory/Optional

Paper - III

Genetic Engineering of Plant and
Microbes and Biostatistics

Time : Three Hours] [Maximum Marks : 80

Note : Answer from both sections as directed. The figures in the right-hand margin indicate marks.

Section-A

1. Answer the following objective type questions: $1 \times 10 = 10$
- (a) Who developed the chemical techniques to synthesize polynucleotides?

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(Turn Over)

(2)

- (b) The first recombinant DNA molecule was synthesized in the year ____
- (c) Which of the plant growth regulators are produced by TDNA?
- (d) Which hormone control ripening in tomatos?
- (e) Which plant is first Transgenic plant?
- (f) The transfer of genes from one cell to another by a bacteriophage is known as ____
- (g) Which organism consists of single-stranded DNA?
- (h) What is proteome?
- (i) What is bioinformatics?
- (j) Who is the father of biostatistics?
2. Answer the following short answer type questions: 2×5
- (a) What do you mean by cDNA library?
- (b) What is transgenic plant?
- (c) What is Bacterial transformation?

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(Continued)

(3)

- (d) What do you mean by molecular marker?
- (e) Explain the Chi-square test.

Section-B

Answer the following descriptive type questions. 15×4

3. Describe the DNA finger printing.

OR

Write short notes on the following:

- (a) Polymerase Chain Reaction (PCR)
- (b) DNA synthesis

4. Explain the transposon mediated gene tagging. <https://www.abvvonline.com>

OR

Write short notes on the following:

- (a) Chloroplast transformation and its utility.
- (b) Aims for development of transgenic plant.

(4)

5. Describe the nitrogen fixer's fermentation technology.

OR

Write short notes on the following:

- (a) Benefits of genetic improvement
- (b) Genetic manipulation in plant cell

6. Describe the artificial chromosome.

OR

Write short notes on the following :

- (a) DNA sequencing
- (b) Standard error with examples

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