

ED-642

M.Sc. 3rd Semester Examination, March-April 2021

BIOTECHNOLOGY

Paper - IX

Genetic Engineering

Time: Three Hours [Maximum Marks: 80]

[Minimum Pass Marks: 16

Note: Answer **all** questions in which Question No.1 is compulsory. All questions carry equal marks.

- 1. Write in brief on the following:
 - (a) Applications of Genetic engineering
 - (b) Artificial chromosomes (BAC and YAC)
 - (c) RNase protection assay
 - (d) Role of gene tagging in gene analysis

Unit-I

2. Explain nucleic acid purification and yield analysis.

OR

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(Turn Over)

Write short notes on the following:

- (a) Genetic engineering guidelines
- (b) Restriction enzymes

Unit-II

3. Explain alternative strategies of gene cloning mentioning their applications.

OR

Write short notes on the following:

- (a) Chemical synthesis of DNA primers and Linkers
- (b) Reverse transcription

Unit-III

4. Write a brief note on Protein engineering and mention its applications.

OR

Write short notes on the following:

- (a) Expression in insects and insect cells
- (b) S1 mapping

Unit-IV

5. Give a brief note on characterization and stabilization of recombinant proteins.

OR

Write short notes on the following:

- (a) Targeted gene replacement
- (b) Gene augmentation