



M.Sc. 3rd Semester
Examination, Dec.-Jan., 2021-22

BIOTECHNOLOGY

Paper - IX

Genetic Engineering

Time : Three Hours] [*Maximum Marks* : 80
[*Minimum Pass Marks* : 16

Note : Answer **all** questions. All questions carry equal marks.

1. Write brief notes on the following :
 - (a) Restriction enzymes
 - (b) Linker and adaptor
 - (c) RNase protection assay
 - (d) Targeted gene replacement

(2)

Unit-I

2. Discuss the procedure of nucleic acid purification and explain the method of yield analysis.

OR

Write notes on the following :

- (a) Modification enzymes
- (b) Scope of genetic engineering

Unit-II

3. Describe in detail the various vectors used for gene cloning.

OR

Write notes on the following :

- (a) Two hybrid system
- (b) Chemical synthesis of oligonucleotides

Unit-III

4. Discuss the site directed mutagenesis and protein engineering in detail.

OR

Write notes on the following :

- (a) Vector engineering
- (b) Expression in bacteria

(3)

Unit-IV

5. Explain T-DNA and transposon tagging and their significance in gene analysis.

OR

Write notes on the following :

- (a) Strategies of gene delivery-viral and non-viral
 - (b) Stabilization of recombinant proteins
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