

2003001105020005
EXAMINATION OCTOBER 2024
BACHELOR OF SCIENCE (FIFTH SEMESTER)
GENETIC ENGINEERING - LEVEL 2

[Time: As Per Schedule]

[Max. Marks: 50]

Instructions:

1. Fill up strictly the following details on your answer book
 - a. Name of the Examination: **BACHELOR OF SCIENCE (FIFTH SEMESTER)**
 - b. Name of the Subject: **GENETIC ENGINEERING – LEVEL 2**
 - c. Subject Code No: **2003001105020005**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

Student's Signature

- Q.1 Attempt the following questions in short (Any Four) 8**
- a) Give two advantages of liposome mediated technique for DNA delivery.
 - b) Mentioned the role of helper virus in Ti plasmid-based vectors.
 - c) What are the functions of cos sites in lambda phage vectors?
 - d) Write two key features of type II restriction endonucleases.
 - e) Significance of the function of insertion sequence (IS) elements in M13.
- Q.2 Attempt Any Two: 14**
- a) Explain the concept of gene cloning and its significance in biotechnology.
 - b) Provide an overview of restriction endonucleases, including nomenclature, classification, and basic features.
 - c) Describe vectors based on M13 and their applications.
- Q.3 Explain in detail Any Two: 14**
- a) What is blue-white screening? Provide a detailed explanation.
 - b) Outline methods for introducing DNA into non-bacterial cells, including at least two techniques.
 - c) Provide a detailed overview of Ti plasmids and its vector including a diagram

Q.4 Attempt Any Two of the following:

14

- a) Write a note on primer designing, including its importance.
- b) Explain the principles and applications of colony hybridization.
- c) Discuss practical uses of hybridization probing.
