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(20426) Roll No. .....

B.Sc. (Bio-Tech.)-II Yr.

3469

B.Sc. (Biotechnology)

Examination, April-2026

RECOMBINANT DNA TECHNOLOGY

(B-206)

B.Sc. (Bio-tech.)

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt any **five** questions. **All** questions carry equal marks.

1. Define vectors and types in RDT. Write the various methods to screen positive clones for insertion of a desired gene into the vector. 10

P.T.O.

2. Define gene cloning and its purpose in biotechnology. Write the basic procedure to clone a gene and its expression in a suitable host. 10

3. Write short notes on any **two** of the following: 5×2=10

   (i) Differences between specific and degenerate primers

   (ii) Immuno-screening of libraries

   (iii) α-complementation

4. Write the basic principle of pyrosequencing and discuss the role of sequencing in DNA manipulation. 10

5. Write short notes on the following:

   (i) ELISA and its types 3

   (ii) NGS platforms 3

   (iii) Molecular weight of protein derived from 981 bp long gene. 4

6. Write the basic principle of PCR, its types and applications in detail. 10

7. Define the concept of electrophoresis and explain its applications for protein analysis. 10

8. Define restriction enzymes, its types, and applications in designing recombinant DNA constructs. 10

9. Write short notes on the followings:

(i) Role of dyes used in various electrophoresis. 3

(ii) Phagemids 3

(iii) How many bands will appear during gel electrophoresis while using EcoRI and BamHI restriction enzymes from a gene having three EcoRI and one BamHI restriction sites. 4

10. Explain the limitations of recombinant DNA technology and associated ethical issues. 10

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