

Exam. Code : 107405

Subject Code : 2229

B.Sc. Biotechnology 5th Semester

rDNA TECHNOLOGY—A

Paper : BT—1

Time Allowed—3 Hours]

[Maximum Marks—40

SECTION—A

1. Attempt All questions : (1 mark each)
- (i) Explain the use of nuclease alkaline Phosphatase in gene cloning.
 - (ii) Give an example of non-specific endonuclease.
 - (iii) Write a note on histochemical selection.
 - (iv) What are fosmids ?
 - (v) Denaturation and depurintion are the terms associated with blotting.
 - (vi) Mention the properties of nylon membrane that makes them suitable for blotting experiments.
 - (vii) Mention the name and working of enzyme used in end labeling.
 - (viii) What are probes and mention its applications ?

SECTION—B

Note :— Attempt **five** questions by selecting **one** from each unit. (4 marks each)

UNIT—I

2. Explain how blunt and sticky ends are produced. How these ends helps in gene cloning ?
3. Explain the role of reverse transcriptase in gene cloning.

UNIT—II

4. What are bacteriophages ? Explain the properties of bacteriophages that make them suitable for library preparations.
5. Explain the essential features of M13 phage.

UNIT—III

6. Explain the method hybridize DNA with RNA.
7. Explain transfection and microprojectile based method of transformation.

UNIT—IV

8. Explain Random priming and Nick translation methods of probe labeling.
9. What are the advantages and disadvantages of non-radioactive labeling ?

SECTION—C

Note :— Attempt any **two** questions. (6 marks each)

10. What are restriction enzymes ? Explain with examples various types of restriction enzymes.

11. What are vectors ? Explain the essential features of plasmid, phagemid and cosmid vector.
12. Explain Southern blotting. What kind of membrane you will prefer for this method and why ?
13. Explain detection methods for radioactive and non-radioactive hybridization methods.