Progressive Education Society's
Modern College of Arts, Science & Commerce (Autonomous)
Ganeshkhind, Pune – 16
End Semester Examination: October/November 2024
Faculty: Science and Technology

Program: B. Sc. Biotech (04) **Semester: V** **SET A**
Program (Specific): Biotechnology **Course Type: Core**
Class: T. Y. B. Sc. **Max. Marks: 35**
Name of the Course: Recombinant DNA Technology
Course Code: 24 BBT 502 **Time: 2 Hr.**

Instructions to the candidate:

1) ***There are 4 sections in the question paper. Write each section on separate page.***
2) ***All Sections are compulsory.***
3) ***Figures to the right indicate full marks.***
4) ***Draw a well-labeled diagram wherever necessary.***

SECTION: A

Q1) Answer the following (Attempt any 5/6) **5**

1. Name two selectable markers present in plasmid.
2. Mention role of polynucleotide kinase in rDNA Technology.
3. What is Annealing Temperature in PCR?
4. Enlist components required for Sanger's method of DNA sequencing.
5. Write any two applications of rDNA Technology.
6. What are Palindromic sequences?

SECTION: B

Q2) Answer the following (Attempt any 5/6) **10**

1. What is replacement vector? Give example.
2. Mention salient features of ideal vector.
3. What are Endonucleases? Give its role in rDNA.
4. Highlight the applications of cDNA Library.
5. Mention the name and role of enzymes used in PCR.
6. What is gene therapy? Explain any two application.

SECTION: C

Q3) Answer the following (Attempt any 2/4) **8**

1. Comment on phage vectors and its utility.
2. Describe the technology of genome editing using a suitable example.
3. Write a note on Insertional inactivation.
4. What is Next generation sequencing technology? Write its advantages.

SECTION: D

Q4) Answer the following (Attempt any 2/4) **12**

1. Discuss the salient features of Ti plasmid with neat labelled diagram.
2. Compare and contrast between Genomic library & cDNA Library.
3. Give application of Recombinant DNA Technology with respect to Insulin production.
4. Explain how artificial chromosomes can be effectively used for sequencing projects.