

**Exam. Code : 107406**

**Subject Code : 2330**

**B.Sc. (Bio Technology) 6<sup>th</sup> Semester**

**BT-1 : rDNA TECHNOLOGY-B**

Time Allowed—3 Hours] [Maximum Marks—40

**SECTION—A**

**Note :—** Attempt **ALL** questions. 1 mark each.

1. Explain TAC vectors.
2. What do you mean by expression cassette ?
3. What is self priming ?
4. Explain Multiplex PCR.
5. What kind of probe is used for cDNA micro-array ?
6. Error prone PCR.
7. Role of  $Mg^{2+}$  ions in *Taq* activity.
8. Plasmid display.

**SECTION—B**

**Note :—** Attempt **FIVE** questions by selecting **ONE** from each unit. 4 marks each.

**UNIT-I**

1. Explain the essential features of T1 plasmid that makes it suitable for plant transformation.

2. Explain, with examples, various kinds of constitutive, regulatory and organ specific promoters used for vector construction.

**UNIT-II**

3. How can you screen the genomics library ?
4. Describe the role of linkers and adapters in cloning.

**UNIT-III**

5. Explain different forms of PCR, used for full length cDNA cloning.
6. What are microarrays ? How are they helpful in analyzing global gene expression and what are its limitations ?

**UNIT-IV**

7. Explain Phage display.
8. Mention the selection methods for mutant peptides.

**SECTION—C**

**Note :—** Do any **TWO** questions. 6 marks each.

9. What are expression vectors ? Explain it with a suitable example ? How can you purify a recombinant proteins produced by expression vectors ?

10. What are lambda vectors ? What makes them suitable for cloning of large fragments ? How can you screen a cDNA lambda library ?
11. What is PCR ? Explain various steps of PCR and important components of a PCR reaction.
12. What is site directed mutagenesis ? How is it done and what is its importance ?