Exam. Code : 107406

Subject Code : 2170

B.Sc. (Bio-Technology) Semester—VI

rDNA TECHNOLOGY—B

Paper—BT-1

Time Allowed—3 Hours] [Maximum Marks—40

SECTION—A

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

(i) Why BAC libraries are preferred for sequencing of large genomes ?

(ii) How can you regulate the expression of a recombinant protein ?

(iii) What are opines ?

(iv) How can you find out melting temperature of primers ?

(v) What are dideoxy nucleotides ?

(vi) What are linkers and their role in gene cloning ?

(vii) What are directional libraries ?

(viii) What is phage display ?

SECTION—B

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

UNIT—I

1. How can you increase root mass in plants ? Explain in detail.

2. What are expression vectors ? Explain with examples.

UNIT—II

3. How can you prevent the self annealing of vectors while cloning a gene ?

4. Explain the properties of lambda vector ?

UNIT—III

5. Explain the principle of PCR.

6. Explain the concepts of microarrays.

UNIT—IV

7. Explain Sanger's method of DNA sequencing.

8. How can you mutate a site by PCR ?

SECTION—C

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

9. What are shuttle vectors ? Explain each component of vector with diagram.

10. What are genomic libraries ? How can you screen prokaryotic and eukaryotic libraries ?

11. How the microarray helps in understanding differential gene expression ? What are its advantages over real time PCR ?

12. Explain phage display in detail.