2/5/23

(i) Printed Pages : 2

(ii) Questions : 9

Roll No. .....

Sub. Code : 0 9 8 7

Exam. Code : 0 0 3 8

B.Sc. (Hons.) Biotechnology 6th Semester

(2053)

GENETIC ENGINEERING

Paper : BIOT–601-T

Time Allowed : Three Hours] **[Maximum Marks : 67**

Note :— Attempt **five** questions in all. Question No. 1 is compulsory. Attempt **one** question from each Unit.

1. Attempt the following :

   (a) What are Linkers and adaptors ? Give examples. 3

   (b) What is Homopolymeric Tailing ? 2

   (c) What are Isoschizomers ? Give examples. 2

   (d) What are Phagemids ? 2

   (e) What is the role of antibiotic resistance genes in Vector constructs ? 2

   (f) Define Insertional inactivation. 2

   (g) What is Codon bias in *E.Coli* ? 2

UNIT—I

2. (a) What are Restriction Enzymes ? Deliberate on Properties of Type II Restriction enzymes. 7

(b) What are DNA modifying enzymes ? Discuss role and application of Alkaline phosphatase and Terminal transferases. 6

3. (a) Write about Real time and Inverse PCR. 7

(b) Discuss applications of PCR. 6

UNIT—II

4. Elaborate on construction and application of Cloning vectors in Yeast. 13

5. (a) What are Bacterial Artificial Chromosomes ? Explain features and application in cloning. 7

(b) What is Blue White selection ? Explain principle. 6

UNIT—III

6. (a) Why and how is mRNA enrichment done ? Discuss various methods. 6

(b) Discuss a strategy for full length cDNA synthesis. 7

7. (a) Explain strategies for clone identification and screening. 7

(b) List methods of probe labelling. Discuss any one. 6

UNIT—IV

8. (a) Discuss the technique of Sanger sequencing. 6

(b) Explain primer extension method of site directed mutagenesis. 7

9. Elaborate on special vectors/promoters for recombinant protein production in *E.Coli*. 13