(i) Printed Pages : 2 Roll No. .....

(ii) Questions : 9 Sub. Code : 0 9 8 7

Exam. Code : 0 0 3 8

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

(2054)

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 ? 3

(b) What is Homopolymeric Tailing ? 2

(c) What are Reverse transcriptases ? 2

(d) Define Insertional inactivation. 2

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

(f) What are double digests and partial digests ? 2

(g) What is Stuffer Fragment ? 2

UNIT—I

2. (a) What are Type II Restriction Endonucleases ? Discuss their characteristic features. 7

(b) Draw comparison between DNA Pol I and Klenow Fragment. 6

3. (a) What are Real time PCR and Inverse PCR ? Explain significance. 7

(b) Deliberate on Applications of PCR. 6

UNIT—II

4. (a) What are Insertion and Replacement vectors ? Discuss with examples. 6

(b) List cloning vectors of E.coli. Elaborate on features of pBR327 and pUC8. 7

5. What is Insertional Inactivation ? How is Blue White selection applied for identification of recombinants ? 13

UNIT—III

6. Write notes on :

(a) Colony Hybridization

(b) DNA probe labelling strategies. 6.5×2

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

(b) Write methods for mRNA enrichment. 6.5×2

UNIT—IV

8. Write notes on :

(a) Pyro sequencing Technique

(b) Site directed mutagenesis. 6.5×2

9. (a) Write about promoter designs for Recombinant protein production in E.coil. 7

(b) Explain limitations and advantages of E. coli as a host cell for recombinant protein production. 6