

(i) Printed Pages : 2

Roll No.

(ii) Questions : 9

Sub. Code :

1	7	9	8	6
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Exam. Code :

0	0	3	8
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**B.Sc. (Hons.) (Biotechnology) 6th Semester
(2056)**

GENETIC ENGINEERING

Paper : BIOT-601-T

Time Allowed : Three Hours]

[Maximum Marks : 67

Note :— Attempt five questions in all. Q.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 are Isoschizomers? Give examples. | 2 |
| (c) What are Reverse transcriptases? | 2 |
| (d) What is Hot Start PCR? | 2 |
| (e) What is Homopolymeric Tailing? | 2 |
| (f) What are Cosmids? | 2 |
| (g) What is Insertional inactivation? | 2 |

UNIT-I

2. Write sources, Mode of action and Applications of following in Genetic engineering:

- | | |
|--------------------------|-------|
| (a) Alkaline phosphatase | 6.5×2 |
| (b) DNA polymerases. | |

3. (a) What are different types of Restriction Enzymes? Discuss Properties and mode of action of Type II Restriction Enzymes. 7
(b) Explain Inverse and Real Time PCR. 6

UNIT-II

4. (a) Discuss construction and Important features of pUC vectors. 7
(b) What is Insertional Inactivation? How is Blue White Selection applied for identification of recombinants? 6
5. Write Notes on:
(a) Cosmids
(b) Bacterial Artificial Chromosomes. 6.5×2

UNIT-III

6. (a) What is Nucleic acid Hybridization? Explain its application for Clone identification. 7
(b) Explain Functional complementation based screening of genomic library. 6
7. (a) Discuss mRNA enrichments and steps for cDNA synthesis for library construction. 7
(b) Discuss DNA probe labelling strategies. 6

UNIT-IV

8. Write notes on:
(a) Maxam-Gilbert sequencing.
(b) Strand Selection Method of Site directed mutagenesis. 6.5×2
9. Discuss Promoter systems for Transgene Expression in Yeast. 13