

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

(ii) Questions : 9 Sub. Code : 

1	7	2	5	8
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Exam. Code : 

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B.A./B.Sc. (General) 3<sup>rd</sup> Semester  
(2124)

**BIO-TECHNOLOGY**

**Paper-BIOT-Elect-Sem-III-T Introduction to Genetic  
Engineering & Immunotechnology**

**Time Allowed : Three Hours] [Maximum Marks : 75**

**Note :—**Attempt **TWO** questions each from Section A &  
Section B. Section C is compulsory.

**SECTION—A**

- I. (a) Explain the method of separating genomic and plasmid DNA. 8  
(b) Write a note on transformation. 7
- II. (a) Write the screening procedure for yeast cloning vector. 8  
(b) Describe the function and mechanism of ligases. 7
- III. (a) Write any three applications of gene cloning. 8  
(b) Explain PCR in detail. 7
- IV. (a) Explain the methods of clone identification. 8  
(b) What are lysogenic phages ? 7

## SECTION—B

- V. (a) Explain the structure of antibody in detail. 8  
(b) What is meant by active and passive immunity ? 7
- VI. (a) Explain the mechanism of action of macrophages. 8  
(b) Describe radial immunodiffusion. 7
- VII. (a) Write a note on Class 1 MHC molecules. 8  
(b) What is rocket immunoelectrophoresis ? 7
- VIII. (a) Write a note on Cytotoxic T-cell mediated immunity. 8  
(b) Explain antibody dependent cell mediated cytotoxicity. 7

## SECTION—C

### IX. Compulsory Question :

- (a) What is recombinant DNA technology ?  
(b) What are Cosmids ?  
(c) Write the chemical composition of antigen.  
(d) Explain cross-reaction.  
(e) What are adjuvants ?

5×3=15