

B.Sc. CBCS Pattern Semester-V  
**011A - Biotechnology Paper-I (Genetic Engineering)**

P. Pages : 2

Time : Three Hours



**GUG/W/23/13126**

Max. Marks : 50

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Notes : 1. All questions are compulsory and carry equal marks draw well labeled diagrams wherever necessary.

**1.** Describe in detail restriction endonuclease and their types? **10**

**OR**

i) Discuss lysis of cell for purification of DNA. **2½**

ii) Give the application of PCR **2½**

iii) Add a note on Ligases. **2½**

iv) Add a note on genomic DNA library? **2½**

**2.** Describe in detail Plasmid vectors pBR322? **10**

**OR**

i) Explain in brief bacteriophage vector. **2½**

ii) What is cosmid vector **2½**

iii) Add a note on phagemid as vector. **2½**

iv) Discuss Insertion of foreign DNA into a vector? **2½**

**3** Describe in details transformation? **10**

**OR**

i) Give the account of blue-white selection recombination? **2½**

ii) Discuss transfection by calcium phosphate co-precipitation? **2½**

iii) Explain in brief particle gun method. **2½**

iv) Describe microinjection for rDNA insertion into host well? **2½**

**4.** Describe in detail Monoclonal antibodies production and their applications. **10**

**OR**

i) Discuss the concept of gene therapy? **2½**

- ii) Explain in brief DNA fingerprinting? 2½
- iii) Describe interferon production in short. 2½
- iv) Discuss disease diagnosis by antenatal diagnosis method? 2½

**5. Write in very short any ten-**

- a) What is nuclease? 1
- b) What is cDNA? 1
- c) What is restriction site? 1
- d) What is YAC? 1
- e) What is Homopolymer tail? 1
- f) What is pUC 18? 1
- g) What is rDNA? 1
- h) Lipofection? 1
- i) What is transfection? 1
- j) What is hybridoma? 1
- k) What is the role of interferon? 1
- l) What is genetic counseling? 1

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