

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

P. Pages : 2

Time : Three Hours



GUG/S/25/13126

Max. Marks : 50

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

1. Describe restriction endonuclease enzyme and their types. **10**

OR

i) Discuss the role of DNA manipulation enzymes. **2½**

ii) Discuss applications of Genomic DNA library. **2½**

iii) Discuss Enzymes involved in polymerase chain reaction. **2½**

iv) Discuss isolation of DNA by direct purification of DNA method. **2½**

2. Discuss in detail pBR322 plasmid vectors. **10**

OR

i) Discuss YAC. **2½**

ii) Describe lambda phage as cloning vector. **2½**

iii) Give the account of Phagemid vector. **2½**

iv) Discuss different way of Insertion of foreign DNA into a vector. **2½**

3. Describe in details screening of recombinants by Blue-White selection method. **10**

OR

i) Discuss calcium phosphate coprecipitation method for transaction. **2½**

ii) Describe advantage of particle gun method for rDNA insertion. **2½**

iii) Discuss advantage of microinjection. **2½**

iv) Describe direct section method for Screening of recombinants. **2½**

4. Describe in detail monoclonal antibodies production. **10**

OR

- i) Discuss application of DNA fingerprinting. 2½
- ii) Describe somatic gene therapy. 2½
- iii) Discuss disease diagnosis by antenatal diagnosis. 2½
- iv) Describe Interferon production. 2½

5. Write in very short any ten?

- i) What is cDNA? 1
- ii) Who discovered PCR? 1
- iii) What are the method of lysis of cells? 1
- iv) What is pUC 18? 1
- v) What is mean by BAC? 1
- vi) What is bacteriophage? 1
- vii) What is transformation? 1
- viii) What is lipofection? 1
- ix) What is the uses of DEAE-dextran? 1
- x) What is genetic counseling? 1
- xi) What is hybridoma cell? 1
- xii) Who discovered the DNA fingerprinting method? 1
