

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

P. Pages : 2

Time : Three Hours



GUG/W/24/13126

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Describe the lysis of cells method for the isolation of DNA. **10**

OR

- a) Write a note on cDNA. **2½**
- b) Write the applications of PCR. **2½**
- c) Describe the types of restriction endonuclease. **2½**
- d) Write a note on Genomic DNA library. **2½**

2. Describe the role of lambda-phage as cloning vector. **10**

OR

- a) Explain about YAC as artificial chromosome. **2½**
- b) Explain the role of plasmid vector pBR322 as cloning vector. **2½**
- c) Write a note on - Cosmid vector. **2½**
- d) Explain the role of linkers in the insertion of foreign DNA into a vector. **2½**

3. Give an account of the Blue-White method of selection of recombinants. **10**

OR

- a) Describe the particle gun method of gene transfer. **2½**
- b) Explain the principle of lipofection. **2½**
- c) Give the steps involved in the standard transfection process. **2½**
- d) Explain transformation process in DNA. **2½**

4. Explain the steps and applications of DNA fingerprinting. 10

OR

- a) Write in short about gene therapy. 2½
- b) Explain the role of interferon. 2½
- c) Write an account on genetic counselling. 2½
- d) Give the applications of monoclonal antibodies. 2½

5. Attempt **any ten**.

- a) Name any two DNA manipulation enzymes. 1
- b) What is cDNA? 1
- c) What is molecular scissors? 1
- d) Give any two examples of plasmid vectors. 1
- e) What are phagmid? 1
- f) Write full form of YAC. 1
- g) What is the use of microinjection method. 1
- h) What is DEAE? 1
- i) What is gene gun? 1
- j) What are monoclonal antibodies. 1
- k) What is satellite DNA. 1
- l) Write one application of DNA fingerprinting. 1
