

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

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 cell? **2½**

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

OR

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

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| 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-

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| 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 |
