

B.Sc. (CBCS Pattern) Semester-VI
USMBT-13 - Microbiology Paper-I : Recombinant DNA Technology

P. Pages : 2

Time : Three Hours



GUG/W/24/13333

Max. Marks : 50

1. Write in detail about bacterial vector pBR322 and pUC18. 10

OR

- a) Explain the features of cloning vectors. 2½
- b) Write about restriction enzyme. 2½
- c) Describe the role of DNA ligase. 2½
- d) Write about plant vector (Ti plasmid) 2½

2. Describe the methods of r-DNA transfer into the host. 10

OR

- a) Write about the method of genomic DNA isolation. 2½
- b) Write about homopolymer tailing. 2½
- c) Describe the method of blue white selection. 2½
- d) Explain insertional inactivation method. 2½

3. Write in about principle, procedure and application of PCR. 10

OR

- a) Write about DNA fingerprinting. 2½
- b) Explain Sangers method of DNA sequencing. 2½
- c) Write about genomic DNA library. 2½
- d) Describe the formation c-DNA library. 2½

4. What is monoclonal antibody? Describe its production by hybridoma technology. 10

OR

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| a) | Write about Bt cotton. | 2½ |
| b) | Explain the production of hepatitis B vaccine. | 2½ |
| c) | What is gene therapy? Describe any one type. | 2½ |
| d) | Describe the production of insulin. | 2½ |

5. Answer **any ten** of the following (1 mark each). **1x10**

- a) What is selectable marker genes?
- b) Give the names of artificial chromosome vector.
- c) What is shuttle vector?
- d) What is linker?
- e) Name the gas used in the gene gun?
- f) What is electroporation?
- g) What is VNTR sequence?
- h) Name the thermostable enzyme used in PCR.
- i) What is ddNTPs?
- j) What is HAT medium?
- k) What is GM food? Give example.
- l) What is DNA vaccine?
