B.Sc. (CBCS Pattern) Semester - VI

USMBT-13 - Microbiology Paper-I : Recombinant DNA Technology

P. Pages : 2 **GUG/S/23/13333**

Time : Three Hours * 1 8 7 9 * Max. Marks : 50

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

1. Define Cloning Vectors & Explain P^{BR322} and P^{VC18} of vector used in Genetic Engineering? **10**

OR

a) Write a short note on Restriction Endonuclease Enzymes? **2½**

b) Explain salient features of Cloning Vectors? **2½**

c) Write a short note on Shuttle and expression vector. **2½**

d) Explain role of Polynucleotide Kinase and Terminal transferase. **2½**

2. Explain the process of Isolation of Genomic and Plasmid DNA in detail? **10**

OR

a) Write a short note on Linkers & Adapters? **2½**

b) Explain in brief Blue-White selection method. **2½**

c) Write a note on Gene Gun method? **2½**

d) Write a short note on Colony Hybridization? **2½**

3. Explain principle, procedure & Applications of PCR in detail? **10**

OR

a) Write a short note on cDNA Library? **2½**

b) Explain Sangers DNA Sequencing method? **2½**

c) Write down process of DNA Fingerprinting? **2½**

d) Write note on automatic DNA sequencer. **2½**

4. Discuss in detail Hybridoma technology & production of Monoclonal Antibody? **10**

OR

a) Write a short note on Gene therapy? **2½**

b) Write Pros & Cons of Genetically Modified food? **2½**

c) Write a short note on DNA Vaccine? **2½**

d) Explain the production of insulin. **2½**

5. Attempt **any ten**.

a) Define Endonuclease? **1**

b) Write function of Alkaline Phosphatase? **1**

c) Give example of select table marker gene. **1**

d) Define Linkers? **1**

e) Define Lipofection. **1**

f) Define Plasmids? **1**

g) Give example of enzyme use in PCR? **1**

h) What is annealing. **1**

i) Write full form of VNTR? **1**

j) Define Vaccines? **1**

k) Give example of Transgenic Plants? **1**

l) Define Interferons? **1**

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