

JB-108

July-2021

B.Sc., Sem.-VI

307 : Microbiology

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) All questions in **Section – I** carry equal marks.
 - (2) Attempt any **Three** questions in **Section – I**.
 - (3) **Section – II** is **COMPULSORY**.

SECTION – I

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|----|---|---|
| 1. | (A) Give an outline of gene cloning. | 7 |
| | (B) Describe phage vectors. | 7 |
| 2. | (A) Write a note on plasmid vectors. | 7 |
| | (B) Write a note on: Restriction endonucleases. | 7 |
| 3. | (A) Describe PCR. | 7 |
| | (B) Write a note on: Southern blotting. | 7 |
| 4. | (A) Describe Sanger's Dideoxy chain termination method. | 7 |
| | (B) Describe Site-directed mutagenesis. | 7 |
| 5. | (A) Write note on: Genomic library construction | 7 |
| | (B) Describe Gene gun and its applications. | 7 |
| 6. | (A) Describe briefly Colony hybridization technique. | 7 |
| | (B) Explain: Joining of Blunt ends. | 7 |
| 7. | (A) Explain the development of recombinant vaccine(s). | 7 |
| | (B) Write a note on : ELSI | 7 |
| 8. | (A) Describe metagenomics. | 7 |
| | (B) Write a note on: recombinant insulin. | 7 |

9. Answer in 1-2 lines : (Any 8)

- (A) Give the use of Alkaline phosphatase.
- (B) What is a cosmid ?
- (C) Ti-plasmid is found in which organism ?
- (D) What is GFP ? Give its source.
- (E) What is the application of Site-directed mutagenesis ?
- (F) Which membrane is used in Southern blotting ?
- (G) Give the principle of Sanger's sequencing method.
- (H) Give applications of DNA microarray.
- (I) What is a cDNA library ?
- (J) Which vectors are commonly used for construction of genomic library from humans ?
- (K) Give the principle of Electroporation.
- (L) Give the principle of Blue-white screening.
- (M) What is insulin ?
- (N) Give applications of metagenomics ?
- (O) What are the disadvantages of GMF ?
- (P) Given an example of how a transgenic plant resistant to insects is obtained.