

Roll No. : .....

Total No. of Questions : 16 ]

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# MICRSEM-141

M.Sc. (Ist Semester) Examination Dec., 2022

## MICROBIOLOGY

Paper -MB-104

(Microbial Genetics and Genetic Engineering)

Time : 3 Hours ]

[ Maximum Marks : 40

The question paper contains three Sections.

### Section-A

(Marks : 1 × 10 = 10)

**Note :-** Answer all *ten* questions. Answer should not exceed **50** words. Each question carries **1** mark.

### Section-B

(Marks : 3 × 5 = 15)

**Note :-** Answer *five* questions by selecting at least *one* question from each Unit. Answer should not exceed **200** words. Each question carries **3** marks.

### Section-C

(Marks : 5 × 3 = 15)

**Note :-** Answer *three* questions by selecting at least *one* question from each Unit. Answer should not exceed **500** words. Each question carries **5** marks.

### Section-A

1. (i) What is Genome ?
- (ii) What are HFr cells ?

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- (iii) What are F Plasmids ?
- (iv) Define Recombination.
- (v) What is RAPD ?
- (vi) What is RFLP ?
- (vii) What is AFLP ?
- (viii) Define BAC.
- (ix) Define YAC.
- (x) What is P, U, C in PUC 18 ?

### **Section-B**

#### **Unit-I**

- 2. Write a short note on transformation.
- 3. Write briefly about the difference between HFr and F<sup>+</sup> cells.
- 4. What do you understand by Mutant Selection ?

#### **Unit-II**

- 5. Write the importance of Micro arrays in gene expression study.
- 6. What do you understand by Restriction mapping ?
- 7. Write a short note on DNA probes.

#### **Unit-III**

- 8. Why BAC was Engineered ?
- 9. Write the importance of DNA ligase in genetic Engineering.
- 10. Write a short note on Electroporation.

### **Section-C**

#### **Unit-I**

- 11. Write in detail about types and copy control of plasmids.
- 12. Write an essay on Mutagenesis.

### **Unit-II**

13. Write in detail about Nucleic acid Hybridization techniques.
14. Write an essay on DNA sequencing.

### **Unit-III**

15. Explain in detail about gene transfer techniques.
16. Write in detail about Patenting Laws in India.