

Roll No. : .....

Total No. of Questions : 16 ]

[ Total No. of Printed Pages : 3

# **EMIC-126**

**M.Sc. (Ist Semester) Examination, Jan.-2023**

**MICROBIOLOGY**

Paper - FS-MIC-CC-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 :-* The candidate is required to answer all the *ten* questions carries 1 mark each. The answer should not exceed **50** words.

**Section-B**

**(Marks : 3 × 5 = 15)**

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

**Section-C**

**(Marks : 5 × 3 = 15)**

*Note :-* The candidate is required to answer *three* questions by selecting *one* question from each Unit. Each question carries **5** marks. The answer should not exceed **500** words.

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**EMIC-126** P.T.O.

### Section–A

1. (i) Why ORI sequence is important ?
- (ii) What is Electroporation ?
- (iii) What is PUC-18 ?
- (iv) What is transformation ?
- (v) Define Electroporesis.
- (vi) What is AFLP ?
- (vii) What is ECORI ?
- (viii) Define BAC.
- (ix) What is C in cDNA ?
- (x) What are Cos sites ?

### Section–B

#### Unit–I

2. What is the difference between  $F^+$ ,  $F^-$  and Hfr cells ?
3. Write a short note on R Plasmids.
4. Write a short note on Col Plasmid.

#### Unit–II

5. Write a short note on footprinting DNA Assay.
6. What is AFLP ? Describe briefly.
7. What do you understand by polymorphic DNA ?

### **Unit-III**

8. Write a short note on pBR322.
9. Write briefly about Reporter genes
10. Write briefly about Site-directed-Muta-genesis

### **Section-C**

#### **Unit-I**

11. Write an essay on Luria Delbruck experiment.
12. How High Copy Number plasmids control their copy Numbers ? Give suitable examples.

#### **Unit-II**

13. Write an essay on Nucleic Acid Hybridization Assays.
14. Explain the different roles played by DNA probes and describe their applications.

#### **Unit-III**

15. Write an essay on Enzymes used in genetic Engineering.
16. Write in detail about the applications of genetic Engineering in Industry and Medical.