

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

SEM-1036

M.Sc. (Ist Semester) Examination, 2022

MICROBIOLOGY

Paper - FS-MIC-CC-104

(Microbial Genetics and Genetic Engineering)

Time : 3 Hours]

[Maximum Marks : 40

This 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.

Section-A

- (i) Write the number of Chromosome in Bacteria.
- (ii) Define Genome.

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- (iii) What is CoL plasmid ?
- (iv) Define Transformation.
- (v) What is AFLP ?
- (vi) Why Agarose gels are used ?
- (vii) What do you understand by a restriction mapping ?
- (viii) What is pUC-18 ?
- (ix) What is C-DNA ?
- (x) What is an IPR ?

Section-B

Unit-I

- 2. Write the difference between F^+ , F^- and Hfr cells.
- 3. Write a short note on Luria Delbruck experiment.
- 4. What are high copy number plasmids ?

Unit-II

- 5. What is DNA footprinting ?
- 6. Write different steps in PCR.
- 7. Write a short note on Microarray technique.

Unit-III

- 8. Write the importance of Blue-White screening.
- 9. Write the importance of Red-White screening.
- 10. What is pBR 322 ?

Section-C

Unit-I

- 11. Write an essay on gene transfer in bacteria.
- 12. Explain in detail about mutation versus adaptation.

Unit-II

13. Write an essay on nucleic acid hybridization techniques.
14. Write an essay on restriction endonucleases.

Unit-III

15. Write an essay on BAC and YAC.
16. Write detailed notes on the following :
 - (a) Screening of recombinants
 - (b) Site directed mutagenesis