MICRSEM–141

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

Paper –MB–104

(Microbial Genetics and Genetic Engineering)

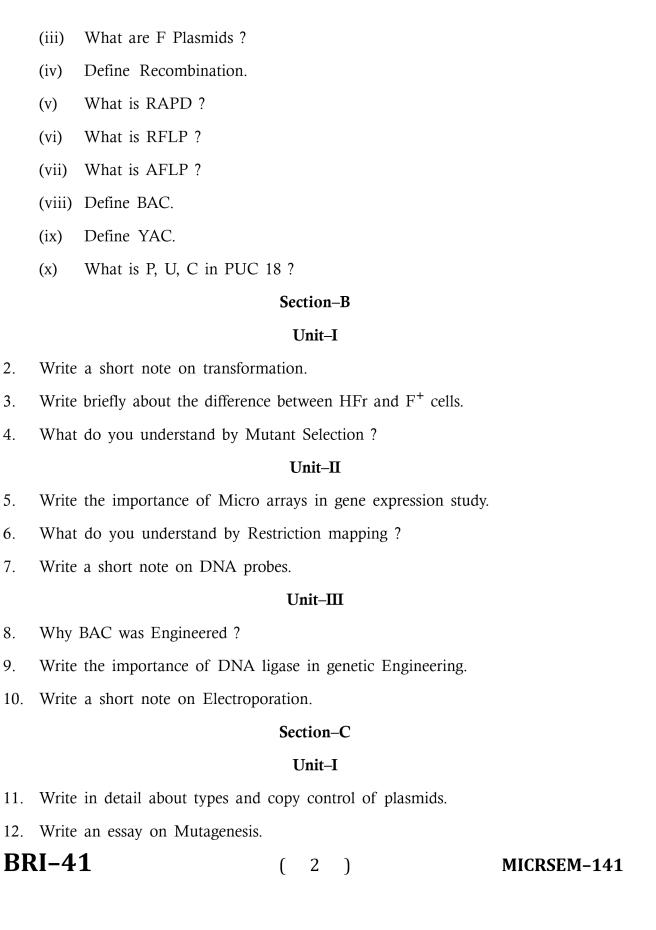*Time : 3 Hours*]   [*Maximum Marks : 40*

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 ?

(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^+ 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.