PG Even Semester Exam, May 2025

Microbiology

2nd Semester

COURSE NO. MBCC- 554

[Microbial Genetics]

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer five questions, selecting one from each unit.

UNIT-I

1. Explain the molecular mechanism of transformation in G +ve anf G-ve bacteria. 14
2. Write notes on: 7x2=14
   a. Generalized Transduction
   b. DNA transfer and replication (DTR) during conjugation process.

UNIT-II

3. What are transposons? Explain the process of transposition in detail. 14
4. Write notes on : 7x2=14
   a. Structure of IS elements.
   b. Holiday model of recombination .

UNIT-III

5. Explain the genetic regulation of competition between Lytic and lysogenic cycle in Lambda (λ) phage. 14
6. Write a detail note on-functional clustering of genes in lytic phages 14

UNIT-IV

7. Describe the negative regulation of Lac-operon. 14
8. What is global regulation? How ppGpp and c-AMP are significant for gene-regulation in bacteria? 14

UNIT-V

9. Write notes on: 7x2=14
   a. Penicillinase plasmid
   b. Ti plasmids
10. Write a detail note on Plasmid family and incapability. 14

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