

2023

4th Semester Examination
MICROBIOLOGY (Honours)

Paper : C 8-T

[Microbial Genetics]

[CBCS]

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions.

2×5=10

1. Define mutator gene. 2
2. What is copy number of plasmid? 2
3. State the function of colicin plasmids. 2
4. What is plasmid incompatibility? 2
5. State the difference between HFT and LFT lysate. 2
6. What is natural competence? What is the importance of natural competence? 1+1

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(2)

7. What is specialized transduction? 2
8. What are the P elements in *Drosophila*? 2

Group - B

Answer any *four* questions. $5 \times 4 = 20$

9. Write a short note on Ames test. Differentiate reversion and suppression of mutation. 4+1
10. Discuss about amplification of plasmid DNA in bacteria. 5
11. Discuss about the genomic organization of *Saccharomyces cerevisiae*. 5
12. Write a short note on Ti plasmid. 5
13. Discuss about the mechanism of recombination in fungi. 5
14. What is Hfr strain? Describe the mechanism of conjugation in Hfr strain. 1+4

Group - C

Answer any *one* question. $10 \times 1 = 10$

15. Describe the mechanism of replicative transposition. Differentiate Replicative and Non-Replicative transposition. 7+3
16. What is mutagen? Name one physical and one chemical mutagen, and describe their modes of action. $2 + (1+1) + (3+3)$
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