K25FY3596 Pages: 2 Reg No:.....
Name:.....

Third Semester FYUGP Degree (Reg) Examination November 2025

KU3DSCMBG205 - MICROBIAL GENETICS

2024 Admission onwards

Time : 1.5 hours Maximum Marks : 50

Section A

Answer any 6 questions. Each carry 2 marks.

1. Mention the advantages of transformation as a method of gene transfer in bacteria
2. What is the function of a selectable marker in transformation?
3. What does the abbreviation “R plasmid” stand for?
4. Name one natural and one laboratory application of bacterial conjugation.
5. List any one gene commonly found on the F plasmid.
6. Which form of conjugation involves transfer of both plasmid and chromosomal genes?
7. Name the 4 nitrogenous bases found in DNA with structures
8. SINES vs LINES

Section B

Answer any 4 questions. Each carry 6 marks.

9. Explain why the F plasmid is important for horizontal gene transfer in bacteria.
10. Explain how the F plasmid allows a bacterium to transfer genetic material to another.
11. Compare $F^+ \times F^-$ conjugation with $Hfr \times F^-$ conjugation in terms of DNA transfer and outcome.
12. Compare differential media and selective media citing relevant example
13. Compare and contrast the virus like retrotransposnes with Poly A retro transposones
14. Compare the Applications of transposable elements versus its negative effects?

Section C

Answer any 1 questions. Each carry 14 marks.

15. Discuss the applications of transduction in molecular genetics, biotechnology , biotechnology and medical microbiology.

16. Discuss the mechanism of specialized transduction with suitable example