

Registration Number:

Date & session:

**ST JOSEPH’S UNIVERSITY, BENGALURU-27**

**M.Sc. (MICROBIOLOGY) – I SEMESTER**

**SEMESTER EXAMINATION: OCTOBER 2023**

**(Examination conducted in November /December 2023)**

**MB 7321: MICROBIAL GENETICS**

**(For current batch students only)**

**Time- 2 hours Max Marks-50**

This question paper contains 1 printed page and 4 parts

**I. Answer any Five of the following 5X3=15**

1. Comment on Hershey and Chase experiment.

2. Draw looped rolling circle replication.

3. Write the principle of particle bombardment.

4. List the merits and demerits of transformations.

5. Differentiate composite and non-composite transposons.

6. Mention the applications of T7 phages.

7. Comment on yeast Ty elements.

1. **Answer any Two of the following 2X5=10**

8. Elucidate the steps involved in the initiation of DNA replication.

9. Draw the Mechanism of retroviral integration and transposition of viral-like

retrotransposons.

10. Illustrate the mechanism for generating the knockouts.

**III. Answer any Two of the following 2X10=20**

11. Explain different classes of Satellite DNA.

12. Discuss the mechanism of reversion.

13. (i) Draw the life cycle of M13 phages (ii) List the applications of plasmids in genetic

engineering. (5 marks each)

**IV. Answer the following 1X5=5**

14. Three different minimal agar media lacking histidine was prepared along with three

different chemicals (A, B and C) to be tested. His- *Salmonella* was inoculated in these

three plates and were incubated. Following observations were recorded after 48 hrs.

Interpret the results. Name the experiment and its principle.

Plate-1 with chemical A: Growth of *Salmonella* was observed,

Plate-2 with chemical B: No growth of *Salmonella*

Plate-3 with chemical C: Growth of *Salmonella* was observed,