



ST. JOSEPH'S COLLEGE (AUTONOMOUS), BENGALURU-27
M.Sc MICROBIOLOGY – I SEMESTER
SEMESTER EXAMINATION – JANUARY 2021
MB 7318 – MICROBIAL GENETICS

Register Number:

Date: 09-01-2021

Time: 2 1/2 hrs

Max. Marks: 70

This paper contains 1 printed page and 4 parts

I. Answer any Five of the following

5x3=15

1. Comment on Mutational hot spots.
2. List the salient features of genetic code.
3. Mention the mode of action of serine recombinase.
4. Comment on Hfr cells and its applications.
5. Differentiate IS elements and Composite transposons.
6. Comment on Ti plasmids.
7. What are Replicative forms and mention its significance.

II. Answer any Five of the following

5x5=25

8. Write short notes on the life cycle of P1 bacteriophages.
9. Explain Gene conversion.
10. Write short notes on the forces involved in maintaining the stability of DNA.
11. Explain the structure of DNA Polymerase holoenzyme with diagram.
12. Elaborate AMES test and mention its applications.
13. Explain gene mapping through Interrupted conjugation.
14. Explain looped rolling circle replication.

III. Answer any Two of the following

2x10=20

15. (a) Explain T_m and hyperchromicity of DNA with suitable diagram.
(b) Write short notes on the reversion of mutation.
16. Write a detailed note on the different types of repetitive DNA sequences.
17. Explain the mechanism of DNA replication in prokaryotes.

IV. Answer the following

1x10=10

18. The task given to Mr. Rao is to identify the gene responsible for cancer, using mouse as a model. Which approach could be suggested to him and explain the technique.