

Date:

Registration number:

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

**B.Sc. MICROBIOLOGY – I SEMESTER**

**END SEMESTER EXAMINATION: OCTOBER 2023**

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

**MB 121: BASIC MICROBIOLOGY AND MICROBIOLOGICAL TECHNIQUES**

**(For current batch students only)**

**Time- 2 hours Max Marks-60**

**This paper contains two printed pages and four parts.**

**I. Answer any Five of the following 5 x 3 = 15**

1. List any three branches of microbiology and state their importance to a microbiologist.

2. How are pro and eukaryotic ribosomes different?

3. What is lytic life cycle of phages?

4. Why are cationic dyes used for general staining procedures? Can anionic dyes also be

used? How does it help in the visualization of bacteria?

5. List three contributions of Pasteur.

6. List the functions of the following: a. peroxisome b. ER c. tail fibers in T4

7. Write a flowchart describing the protocol of cell wall staining

**II. Answer any Five of the following 5 x 6 = 30**

8. List differences between gram-positive and gram-negative flagella.

9. Explain the structure and composition of the plasma membrane.

10. Write in two sentences on the following:

a. Limit of resolution b. Fluorescence c. Pasteurization

11. Explain how filtration can be used for sterilization?

12. Draw the ultrastructure of a cyanophycean cell.

13. Give the modes of antimicrobial action of: a. formaldehyde b. UV rays c. heavy metals d. moist heat under pressure e. phenol f. halogens

14.Draw and label the structure of HIV.

**III. Answer any One of the following 1 x 10 = 10**

15. Compare and Contrast the principle, working, and image formation of light versus electron microscope.

16. a. List the modes of asexual reproduction in fungi.

b. Explain the life cycle of T4 phage.

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

17.a. How can a light microscope be converted to a dark field microscope and what is its advantage over a light microscope? (3)

b. How can we validate if an autoclave is working well? (2)