

25BMB102

**UG PROGRAM (4 YEARS HONOURS) WITH SINGLE MAJOR
AT THE END OF FIRST SEMESTER
MICROBIOLOGY – PRINCIPLES OF BACTERIOLOGY AND MICROBIAL TECHNIQUES
(B.Sc. HONOURS-MAJOR)
(w.e.f. Admitted Batch 2025-26)**

Time: 3 Hours

Maximum: 70 Marks

Section-A

Answer any Five Questions.

5x4=20

1. Structure and function of bacterial flagella.
2. Salient features of Mycoplasma.
3. Principle of Fluorescence microscopy.
4. Define the terms "Sterilization" and "Disinfection".
5. Explain the principle of Serial Dilution for isolation.
6. Gram-negative cell wall.
7. Components of a Bright-Field Microscope.
8. Process of Lyophilization.

Section-B

Answer All Questions.

5x10=50

9. a) Describe the ultrastructure of bacterial cell.
(Or)
b) Explain the structure and formation of bacterial endospores.
10. a) Discuss the salient features of photosynthetic bacteria.
(Or)
b) Describe the characteristics of extremophiles.
11. a) Explain the principle and applications of the Transmission Electron Microscope.
(Or)
b) Describe the procedure and principle of Gram staining in detail.
12. a) Explain the types and modes of action of chemical disinfectants.
(Or)
b) Discuss the various physical methods of microbial control.
13. a) Describe the various plating methods used for the isolation of pure cultures.
(Or)
b) Discuss the methods used for the cultivation of anaerobic bacteria.