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

**B.Sc – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2023**

**(Examination conducted in May 2023)**

**BT221: Microbiological Methods**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 60**

**This paper contains *ONE* printed pages and *THREE* parts**

**PART-A**

**Answer and TEN of the following 2 x 10= 20 marks**

1. Write the role of exciter and barrier filter in fluorescence microscopy.

2. What is VBNC?

3. Write the working principle of a centrifuge.

4. Define chromophore.

5. What is the difference between the resolving power and magnification of a microscope?

6. What is the effect of UV rays on microbes?

7. What are fastidious and nonfastidious organisms? Give an example each.

8. What is selective media?

9. List four mechanisms of antibiotic resistance.

10. What is PDR and XDR?

11. What do you understand from fungicidal and fungistatic agents?

12. What is NNRTI and NRTI?

**PART B**

**Answer any FOUR of the following: 5x4= 20 marks**

13. Write the principle, construction and applications of Autoclave.

14. Explain the working principle of spectrophotometer. Write the applications of UV-Visible spectroscopy.

15. Write a note on methods of microbial culture preservation.

16. Draw a flow chart of different types of microbial culture media. Give an example for any 4 types of media.

17. Explain the molecular mechanisms of antimicrobial resistance.

18. Explain the mode of action of Amphotericin B.

**PART C**

**Answer any TWO of the following: 10x 2= 20 marks**

19. Explain the mode of action of different chemicals used as antimicrobials.

20. Elaborate on the different methods of dry heat sterilization. What factors/conditions influence the effectiveness of antimicrobial agents?

21. Explain the methods used to assess activity of antibacterial agents.