QP Code: U25B042

Reg. No : .....
Name : .....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

II SEMESTER (FYUGP) DEGREE EXAMINATION, MARCH 2025
B.A/B.Sc/B.Com/BSW
MBY2MN100 : BASIC TECHNIQUES IN MICROBIOLOGY
2024 Admission Onwards
(Credits: 4)

Time: 2 Hours **Maximum Marks: 70**

Section A

*Answer **all**. Each question carries **3** Marks* ***(Ceiling: 24 Marks)***

1. What is numerical aperture? [BTL1]
2. List the primary stain and counter stain used in the Schaeffer-Fulton technique. [BTL1]
3. What is the use of a semi-solid medium? [BTL1]
4. What is MTCC? [BTL2]
5. Name two examples of stains used in negative staining? What is the purpose of negative staining? [BTL4]
6. Examine how the use of electron beam can increase the resolution in electron microscopy. [BTL4]
7. Compare and contrast any two fungal staining techniques. [BTL4]
8. Identify the importance of reducing agents in media used to grow *Clostridium tetani.* [BTL3]
9. Compare and contrast spread and pour plate culture techniques. [BTL4]
10. Distinguish the unique characteristics that contribute to acid-fastness of bacteria. [BTL4]

Section B

*Answer **all**. Each question carries **6** Marks* ***(Ceiling: 36 Marks)***

11. Compare the use of negative staining and shadowing techniques in electron microscopy. [BTL2]
12. Describe the important factors to be considered during the preparation of permanent slides. [BTL1]
13. How does EMB act as both a selective and differential medium? [BTL2]

Turn Over

14. Evaluate the role of freeze- drying as culture preservation technique by culture collection centres. [BTL5]
15. Analyze the role of each component of an anaerobic jar in creating and maintaining the anaerobic environment. [BTL4]
16. Examine the use of confocal microscopy in improving contrast and resolution of images. [BTL4]
17. Explain the importance of smear preparation in bacterial staining. How does it affect the accuracy of results? [BTL3]
18. Examine the use of basal media and enriched media in bacterial isolation and identification. [BTL4]

Section C

*Answer **any one**. Each question carries **10** Marks* ***(1x10=10 Marks)***

19. Describe the principle and working of dark field and fluorescence microscopes. Comment on the specific uses of these microscopes in Microbiology. [BTL1]

20. Justify the use of various culture preservation strategies in maintaining microbial cultures. [BTL5]

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