

**Total Pages—4 PG/IIS/MCB/204.1 & 204.2/23  
(CBCS)**

**M.Sc. 2nd Semester Examination, 2023**

**MICROBIOLOGY**

*( Microbial World )*

**PAPER – MCB-204.1 & 204.2**

*Full Marks : 40*

*Time : 2 hours*

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

**PAPER – MCB 204.1**

*[ Marks : 20 ]*

**A. Answer any two questions from the following : 2 × 2**

- 1. What is the concept of biogenesis ?**
- 2. What is phenol co-efficient ?**
- 3. What is the utility of biosafety cabinet ?**
- 4. Define sterilization.**

*( Turn Over )*

B. Answer any *two* questions from the following :  $4 \times 2$

5. State the Koch's postulates with explanation. 4

6. State the principle and application of moist heat sterilization technique. 2 + 2

7. Write down the contributions of Louis Pasteur in microbiology. 4

8. What is the function of a fermenter ? Draw and label different parts of a fermenter. 2 + 2

C. Answer any *one* question from the following :  $8 \times 1$

9. Compare the cell wall composition of Gram positive and Gram negative bacteria. Write short note on

(i) UV as disinfectant

(ii) HEPA filter. 4 + 2 + 2

10. State the principle and application of hot air oven. State which sterilization technique(s) should be used for sterilizing the following elements

- (a) Culture media
- (b) Inoculation loop
- (c) Cheese cloth
- (d) Glass wares. (2 + 2) + (1 + 1 + 1 + 1)

**PAPER – MCB 204.2**

[ Marks : 20 ]

- D. Answer any *two* questions from the following : 2 × 2
- 11. What is pure culture ?
  - 12. State the role of agar and cotton in microbiological culture media preparation.
  - 13. What is biosafety ?
  - 14. Define heterotroph with example.
- E. Answer any *two* questions from the following : 4 × 2
- 15. Classify bacteria on the basis of their temperature requirement. 4

16. What is selective media ? 'Mac-Conkey media is both selective and differential in nature' - Explain. 1 + 3

17. Write a note on microbial risk assessment in laboratories. 4

18. Compare the requirements of BSL-1, 2, 3 & 4 laboratories. 4

F. Answer any *one* question from the following :  $8 \times 1$

19. Write the process of spread plate technique. In which sense it is differed from pour plate technique ? How anaerobes can be culture in the laboratory ? 3 + 2 + 3

20. Write down the steps of decontamination of a microbiological laboratory. Briefly describe about different decontamination methods. 3 + 5

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