

PRACTICE SET
End Semester Examination, May 2026

Program: BMRIT

Semester: II

Subject: Basics of Microbiology

Subject Code: 42BBMRIT010

Course Outcome:

On the completion of the Course, the students will be able to:

Course Outcomes	Description
CO1	Describe the structure, classification, morphology and growth of bacteria.
CO2	Describe the methods sterilization, disinfection, its applications and the management of biomedical waste
CO3	Explain the concepts of immunity, hypersensitivity and immunization
CO4	Describe Nosocomial infections and methods for prevention of Hospital acquired infections.
CO5	Describe the list of common fungi and viruses and explain their importance.

- 1. Section A : 10 Marks Question covering All units (Total No. of questions 30)**
- 2. Section B : 20 Marks Question covering All units (Total No. of questions 20)**

UNIT I

Section A (10 marks)

1. Define bacteria and describe their morphology including size, shape, and arrangement in detail. [CO1, Remember, LOT]
2. Explain the structure and functions of bacterial cell components such as cell wall, flagella, capsule, and spores. [CO1, Understand, LOT]
3. Describe the bacterial growth curve, explaining its different phases, and discuss the various physical and chemical factors affecting bacterial growth. [CO1, Understand, LOT]
4. Explain the role of culture media and different culture methods used for bacterial growth. [CO1, Understand, LOT]

5. Analyze the differences between Gram-positive and Gram-negative bacteria based on structure and staining. [CO1, Analyze, HOT]
6. Describe antimicrobial sensitivity testing, including its methods, and explain its importance in clinical microbiology for selecting appropriate antibiotic therapy. [CO1, Apply, LOT]

Section B (20 marks)

7. Analyze bacterial growth and the various physical and chemical factors influencing it, with suitable examples from different environments. [CO1, Analyze, HOT]
8. Assess the importance of antimicrobial sensitivity testing in the treatment of infections, focusing on its role in selecting effective antibiotics and preventing resistance. [CO1, Evaluate, HOT]

UNIT II

Section A (10 marks)

9. Define sterilization and disinfection, and explain their basic principles in controlling microbial growth. [CO2, Remember, LOT]
10. Describe different methods of sterilization, including dry heat and moist heat, with their mechanisms and applications. [CO2, Understand, LOT]
11. Explain chemical disinfectants and their mechanisms of action against microorganisms with suitable examples. [CO2, Understand, LOT]
12. Describe gaseous sterilization methods and explain their applications in sterilizing heat-sensitive materials. [CO2, Understand, LOT]
13. Analyze the differences between sterilization and disinfection in terms of effectiveness, methods, and applications. [CO2, Analyze, HOT]
14. Explain biomedical waste management and discuss its importance in maintaining hygiene and preventing infection. [CO2, Apply, LOT]

Section B (20 marks)

15. Evaluate different methods of sterilization, including physical and chemical methods, and discuss their applications in healthcare settings. [CO2, Evaluate, HOT]
16. Design a comprehensive biomedical waste management system for a hospital, including segregation, treatment, and disposal methods. [CO2, Create, HOT]

UNIT III

Section A (10 marks)

17. Define immunity and explain its different types, including innate and acquired immunity, with suitable examples. [CO3, Remember, LOT]
18. Analyze the differences between innate and acquired immunity in terms of components, response, and specificity. [CO3, Analyze, HOT]

19. Describe the structure and functions of antigens and antibodies in the immune system. [CO3, Understand, LOT]
20. Explain the different types of hypersensitivity reactions, highlighting their mechanisms and examples. [CO3, Understand, LOT]
21. Describe the mechanism of immune response, including the role of cells and molecules involved. [CO3, Understand, LOT]
22. Explain immunization and discuss its importance in disease prevention and control. [CO3, Apply, LOT]

Section B (20 marks)

23. Analyze hypersensitivity reactions in detail and discuss their clinical implications in various diseases. [CO3, Analyze, HOT]
24. Assess the importance of immunity in disease prevention and control, with reference to public health strategies. [CO3, Evaluate, HOT]

UNIT IV

Section A (10 marks)

25. Define nosocomial infections and explain their sources, modes of transmission, and common causative agents in hospital settings. [CO4, Remember, LOT]
26. Analyze the modes of transmission of nosocomial infections, including factors contributing to their spread in healthcare settings. [CO4, Analyze, HOT]
27. Describe the general characteristics and classification of fungi based on their morphology and mode of reproduction. [CO5, Understand, LOT]
28. Explain the morphology and different modes of reproduction in fungi, including both asexual and sexual methods. [CO5, Understand, LOT]
29. Describe the general properties and classification of viruses based on their structure, genetic material, and host specificity. [CO5, Understand, LOT]
30. Explain the structure, replication, and cultivation of viruses, highlighting the role of host cells in viral multiplication. [CO5, Apply, LOT]

Section B (20 marks)

31. Evaluate nosocomial infections, discussing their sources, transmission, risk factors, and prevention strategies in healthcare settings. [CO4, Evaluate, HOT]
32. Evaluate the replication and pathogenicity of viruses, explaining their interaction with host cells and disease mechanisms. [CO5, Evaluate, HOT]

UNIT V
Section A (10 marks)

33. Describe pyrexia of unknown origin (PUO) and explain its common microbiological causes and diagnostic challenges. [CO5, Understand, LOT]
34. Assess the role of microbiology in the diagnosis of infectious diseases, including laboratory techniques and their importance. [CO5, Evaluate, HOT]
35. Explain meningitis and discuss its major causative organisms, transmission, and clinical features. [CO5, Understand, LOT]
36. Describe zoonotic infections and explain their modes of transmission from animals to humans with suitable examples. [CO5, Understand, LOT]
37. Explain hepatitis and HIV infections, including their causative agents, transmission, and key clinical manifestations. [CO5, Understand, LOT]
38. Describe food poisoning and diarrheal diseases, highlighting their causative organisms and preventive measures. [CO5, Apply, LOT]

Section B (20 marks)

39. Evaluate different infectious diseases, discussing their microbiological aspects, transmission, and clinical significance. [CO5, Evaluate, HOT]
40. Analyze the transmission and control of major infectious diseases, highlighting preventive measures and public health strategies. [CO5, Analyze, HOT]

Summary Sheet

CO Wise

CO	Q. No	Marks
CO1	1,2,3,4,5,6,7,8	100
CO2	9,10,11,12,13,14,15,16	100
CO3	17,18,19,20,21,22,23,24	100
CO4	25,26,27,28,29,30,31,32	100
CO5	33,34,35,36,37,38,39,40	100
Total		500

Unit Wise

Unit	Q. No	Marks
Unit 1	1,2,3,4,5,6,7,8	100
Unit 2	9,10,11,12,13,14,15,16	100
Unit 3	17,18,19,20,21,22,23,24	100
Unit 4	25,26,27,28,29,30,31,32	100
Unit 5	33,34,35,36,37,38,39,40	100
Total		500

Blooms Taxonomy Level (BTL) Wise

BTL	Q. No	Marks
LOT	1,2,3,4,6,9,10,11,12,14,17,19,20,21,22,25,27,28,29,30,33,35,36,37,38	250
HOT	5,7,8,13,15,16,18,23,24,26,31,32,34,39,40	250
Total		500

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Moderated by:-

Disclaimer: -This is a Practice set. The Question in End term examination will differ from the Practice set. This Practice set is meant for practice only.