

# Competency Based Questions and Answers in Microbiology

for Second MBBS Professional Examination

The main objective of this book is to introduce to the undergraduate students the subject of microbiology in a simplified manner in the form of questions and answers. The new CBME curriculum brings with it a finely structured method of learning both theory and practical aspects of microbiology. Also, the upcoming pattern of evaluation is another overwhelming change that a student must gear up for NEXT. Keeping these two new developments in mind, the questions are framed using the competencies enumerated in the subject curriculum, and the answers are written in a structured format using bulleted points to ease learning, understanding and memorizing.

## Salient Features

- Questions and MCQs are prepared as per **CBME** guidelines
- Contents have been written structurally and arranged as per the **CBME** competencies
- Includes traditional unstructured long essays, modified structured long essays, case-based questions, short essays, short answers, MCQs of various types and one-mark questions in the form of 'fill in the blanks'
- Answers have been adequately supported with numerous diagrams, flowcharts and tables

**Pooja Rao** MD is currently Associate Professor, Department of Microbiology, Kasturba Medical College, Mangaluru, Karnataka. She is an infection control officer of a 500-bed tertiary care hospital, KMC Hospital, and member of the hospital infection control committee. She is also the Deputy Quality Manager at State Reference Laboratory (SRL), NACO. She has won the best young scientist award from MAHE in 2018 and best publication award by Manipal-McGill in 2019.



**Sevitha Bhat** MD is currently Associate Professor, Department of Microbiology, Kasturba Medical College, Mangaluru, Karnataka. She has 14 years of teaching experience in clinical microbiology. She has to her credit over 30 papers published in national and international journals.



**Avinash G** MSc (medical microbiology) is currently Assistant Professor, Department of Microbiology, Narayana Medical College, Nellore, Andhra Pradesh. He has over 13 years of teaching experience and is an active educator for NEET PG, NEET MDS and NEET UG (zoology). He has completed his training in NABL (ISO 15189:2012) and Certificate Course in Biostatistics, Epidemiology, and Research Methodology from Prasanna School of Public Health, KMC, Manipal. He has over 14 publications in both national and international Journals and has actively participated in more than 23 conferences with six oral and poster presentations in Medical Microbiology and Research.



**CBS Publishers & Distributors Pvt Ltd**  
4819/XI, Prahlad Street, 24 Ansari Road, Daryaganj, New Delhi 110 002, India  
E-mail: delhi@cbspd.com, customercare@cbspd.com; Website: www.cbspd.com  
New Delhi | Bengaluru | Chennai | Kochi | Kolkata | Lucknow | Mumbai  
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for Second MBBS Professional Examination

Compiled and designed as per  
CBME Guidelines | Competency Based Undergraduate Curriculum  
for the Indian Medical Graduate

- 92 Long Essays
- 221 Short Essays
- 216 Short Answers
- 355 MCQs

**Pooja Rao**  
**Sevitha Bhat**  
**Avinash G**

Sushrutha Academy

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## Details of the Number of Questions and MCQs Included as per the Competency

S. No.	Competency No.	Competency Details	Long Essays	Short Essays	Short Answers	MCQs
<b>1. General Microbiology and Immunity</b>						
1	MI1.1	Describe the different causative agents of infectious diseases, the methods used in their detection, and discuss the role of microbes in health and disease	06	19	15	04
2	MI1.2	Perform and identify the different causative agents of infectious diseases by Gram's stain, ZN stain and stool routine microscopy	—	03	—	01
	MI8.9	Discuss the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing infectious disease				03
	MI8.10	Demonstrate the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing infectious disease				02
3	MI1.3	Describe the epidemiological basis of common infectious diseases	—	03	05	01
4	MI1.4	Classify and describe the different methods of sterilization and disinfection. Discuss the application of the different methods in the laboratory, in clinical and surgical practice	01	05	09	01
5	MI1.5	Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice	01	02	02	02
6	MI1.6	Describe the mechanisms of drug resistance, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy	02	06	04	01
7	MI1.7	Describe the immunological mechanisms in health	02	07	07	06
8	MI1.8	Describe the mechanisms of immunity and response of the host immune system to infections	06	06	23	01
9	MI1.9	Discuss the immunological basis of vaccines and describe the universal immunisation schedule	01	04	08	02
10	MI1.10	Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection.	01	08	06	03
11	MI1.11	Describe the immunological mechanisms of transplantation and tumor immunity	01	03	03	03

S. No.	Competency No.	Competency Details	Long Essays	Short Essays	Short Answers	MCQs
<b>2. CVS and Blood</b>						
12	MI2.1	Describe the aetiologic agents in rheumatic fever and their diagnosis	02	03	02	03
13	MI2.2	Describe the classification aetiopathogenesis, clinical features and discuss the diagnostic modalities of infective endocarditis	02	05	05	02
14	MI2.3	Identify the microbial agents causing rheumatic heart disease and infective endocarditis	—	01	01	02
15	MI2.4	List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing anemia	03	02	06	02
16	MI2.5	Describe the aetiopathogenesis and discuss the clinical Evolution and the laboratory diagnosis of kala-azar, malaria, filariasis and other common parasites prevalent in India	05	05	06	05
17	MI2.6	Identify the causative agent of malaria and filariasis	01	03	02	04
18	MI2.7	Describe the epidemiology, the aetio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	02	07	06	07
<b>3. Gastrointestinal and Hepatobiliary System</b>						
19	MI3.1	Enumerate the microbial agents causing diarrhoea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents	08	10	12	15
20	MI3.2	Identify the common aetiologic agents of diarrhoea and dysentery	—	01	—	06
21	MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course and the laboratory diagnosis of the diseases caused by them	02	04	02	09
22	MI3.4	Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness	01	01	—	04
23	MI3.5	Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis	01	04	04	16
24	MI3.6	Describe the aetiopathogenesis of acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	01	01	01	10
25	MI3.7	Describe the epidemiology, the aetiopathogenesis and discuss the viral markers in the evolution of viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis	02	06	03	15
26	MI3.8	Choose the appropriate laboratory test in the diagnosis of viral hepatitis with emphasis on viral markers	—	03	01	06



S. No.	Competency No.	Competency Details	Long Essays	Short Essays	Short Answers	MCQs
<b>4. Musculoskeletal System Skin and Soft Tissue Infections</b>						
27	MI4.1	Enumerate the microbial agents causing anaerobic infections. Describe the aetiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections	02	03	02	19
28	MI4.2	Describe the aetiopathogenesis, clinical course and discuss the laboratory diagnosis of bone and joint infections	02	04	06	03
29	MI4.3	Describe the aetiopathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis	07	15	13	11
<b>5. Central Nervous System Infections</b>						
30	MI5.1	Describe the aetiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	03	03	05	16
31	MI5.2	Describe the aetiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis	01	04	02	23
32	MI5.3	Identify the microbial agents causing meningitis	01	04	03	03
<b>6. Respiratory Tract Infections</b>						
33	MI6.1	Describe the aetiopathogenesis, laboratory diagnosis and prevention of infections of upper and lower respiratory tract	08	18	16	33
34	MI6.2	Identify the common aetiologic agents of upper respiratory tract infections (Gram's stain)	—	02	—	09
35	MI6.3	Identify the common aetiologic agents of lower respiratory tract infections (Gram's stain and acid-fast stain)	—	02	—	06
<b>7. Genitourinary and Sexually Transmitted Infections</b>						
36	MI7.1	Describe the aetiopathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	03	05	05	10
37	MI7.2	Describe the aetiopathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures	01	01	03	10
38	MI7.3	Describe the aetiopathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of urinary tract infections	01	04	—	07
<b>8. Zoonotic Diseases and Miscellaneous</b>						
39	MI8.1	Enumerate the microbial agents and their vectors causing zoonotic diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course laboratory diagnosis and prevention	05	07	08	18
40	MI8.2	Describe the aetio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	01	06	03	06

S. No.	Competency No.	Competency Details	Long Essays	Short Essays	Short Answers	MCQs
41	MI8.3	Describe the role of oncogenic viruses in the evolution of virus associated malignancy	01	02	—	05
42	MI8.4	Describe the aetiologic agents of emerging infectious diseases. Discuss the clinical course and diagnosis	02	06	02	04
43	MI8.5	Define Healthcare Associated Infections (HAI) and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention	01	05	—	10
44	MI8.6	Describe the basics of Infection control	—	03	02	10
45	MI8.7	Demonstrate infection control practices and use of Personal Protective Equipments (PPE)	—	03	—	03
46	MI8.8	Describe the methods used and significance of assessing the microbial contamination of food, water and air	02	—	07	07
47	MI8.11	Demonstrate respect for patient samples sent to the laboratory for performance of laboratory tests in the detection of microbial agents causing Infectious diseases	—	—	02	03
48	MI8.12	Discuss confidentiality pertaining to patient identity in laboratory results	—	—	03	—
	MI8.14	Demonstrate confidentiality pertaining to patient identity in laboratory results				—
49	MI8.13	Choose the appropriate laboratory test in the diagnosis of the infectious disease	—	02	01	03
	MI8.15	Choose and interpret the results of the laboratory tests used in diagnosis of the infectious diseases				—
50	MI8.16	Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)	Presented in in the form of concise content rather than Question and Answer			—
<b>Total Content</b>			<b>92</b>	<b>221</b>	<b>216</b>	<b>355</b>

Total Number of Fill in the Blanks: 396