

2406000102030701
EXAMINATION JANUARY 2024
BACHELOR OF MEDICINE AND BACHELOR OF SURGERY
(SECOND YEAR)
MICROBIOLOGY (PAPER - I) (NEW) (OMR)

[Time: As Per Schedule]

[Max. Marks: 100]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination : **BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (SECOND YEAR)**
 - b. Name of the Subject : **MICROBIOLOGY (PAPER - I) (NEW) (OMR)**
 - c. Subject Code No : **2406000102030701**
2. Sketch neat and labelled diagram wherever necessary.
 3. Figures to the right indicate full marks of the question.
 4. All questions are compulsory.

Seat No:

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Student's Signature

Microbiology: Paper-I

Q.1 MCQs

20

1. Name the Gram-positive cocci that form grape-like clusters:
A. Streptococcus B. Staphylococcus
C. Enterococcus D. Pneumococcus
2. The immunoglobulin predominant in secretions like saliva and tears is:
A. IgA B. IgG
C. IgM D. IgE
3. Name the staining method used to detect acid-fast bacteria:
A. Gram staining B. Ziehl-Neelsen staining
C. India ink staining D. Methylene blue staining
4. The causative agent of amoebic dysentery is:
A. Giardia lamblia B. Entamoeba histolytica
C. Cryptosporidium parvum D. Balantidium coli
5. The toxin responsible for food poisoning caused by Clostridium botulinum is:
A. Endotoxin B. Botulinum toxin
C. Tetanospasmin D. Exotoxin A

6. The complement pathway that is antibody-dependent is called:
A. Classical pathway B. Alternative pathway
C. Lectin pathway D. Terminal pathway
7. The causative agent of typhoid fever is:
A. *Escherichia coli* B. *Salmonella typhi*
C. *Shigella flexneri* D. *Vibrio cholerae*
8. The immunoglobulin responsible for anaphylactic reactions is:
A. IgE B. IgA
C. IgM D. IgG
9. Which test is used to confirm the diagnosis of *Helicobacter pylori* infection?
A. Urease breath test B. ELISA for antibodies
C. Stool antigen test D. All of the above
10. Name the organism that causes gas gangrene:
A. *Clostridium perfringens* B. *Clostridium difficile*
C. *Clostridium tetani* D. *Escherichia coli*
11. Which hepatitis virus is transmitted via the fecal-oral route?
A. Hepatitis B B. Hepatitis C
C. Hepatitis A D. Hepatitis D
12. Which of the following is a zoonotic bacterial infection?
A. *Salmonella typhi* B. *Leptospira interrogans*
C. *Vibrio cholerae* D. *Shigella flexneri*
13. The gold standard for malaria diagnosis is:
A. Peripheral blood smear B. Rapid diagnostic tests
C. ELISA for antigens D. PCR
14. The causative organism of pseudomembranous colitis is:
A. *Escherichia coli* B. *Clostridium difficile*
C. *Shigella dysenteriae* D. *Salmonella typhi*
15. The organism associated with peptic ulcer disease is:
A. *Helicobacter pylori* B. *Escherichia coli*
C. *Shigella flexneri* D. *Vibrio cholerae*

16. What is the major vector for Dengue fever?
 - A. Aedes aegypti mosquito
 - B. Anopheles mosquito
 - C. Culex mosquito
 - D. Sandfly
17. Which organism is associated with prosthetic valve endocarditis?
 - A. Staphylococcus epidermidis
 - B. Staphylococcus aureus
 - C. Escherichia coli
 - D. Enterococcus faecalis
18. Name the staining method used for identifying Cryptococcus neoformans:
 - A. Gram stain
 - B. India ink staining
 - C. Ziehl-Neelsen staining
 - D. Lactophenol cotton blue
19. Which immunoglobulin is the first to be produced in a primary immune response?
 - A. IgA
 - B. IgG
 - C. IgM
 - D. IgE
20. Rocky mountain spotted fever is due to
 - A. R. rickettsii
 - B. R. prowazekii
 - C. R. typhi
 - D. R. conorii

Section 02

Q.2 Essay-

12

Describe in detail the structure and function of the cell wall and cell membrane of a gram-negative rod with the help of a diagram.

Q.3 Answer in Brief (Any 4 out of 5)

28

1. What are the primary components of the innate immune system, and how do they differ from those of the adaptive immune system?
2. Describe in detail the structure & Function of the Bacterial Cell wall write methods of Demonstration of cell wall
3. Describe the mechanism of action of beta-lactam antibiotics.
4. Discuss the immunopathogenesis of an autoimmune disease
5. Write about antigen-antibody reactions and their applications in diagnostics.

Section 03

Q.4 A 35-year-old male presents with high-grade fever, fatigue, and new onset of a heart murmur. Blood culture grows *Streptococcus viridans*. **12**

1. What is the likely clinical condition? **2**
2. Discuss the pathogenesis of this condition. **5**
3. Describe the laboratory diagnosis and treatment options **5**

Q.5 Answer in Brief (Any 4 out of 5) **28**

1. Describe the laboratory diagnosis of amoebic liver abscess
2. Explain the laboratory diagnosis of typhoid fever.
3. Write about *Clostridium difficile* infections and their management.
4. Importance of effective communication skills in Doctor-Patient relationship
5. Pyrexia of unknown origin: definition, causes and diagnostic test used

*****END*****

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