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Department of Allied Health Sciences
Brainware University
Barasat, Kolkata- 700125

BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – M.Sc.(MB)-2025

Course Name – Medical Bacteriology

Course Code - MMB20404

(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Which statement is true regarding the normal microbial flora present on the skin and mucous membranes ?
 - a) It cannot be eradicated by antimicrobial agents
 - b) It is absent in the stomach due to the acidic pH
 - c) It establishes in the body only after the neonatal period
 - d) The flora in the small bronchi is similar to that of the Trachea
- (ii) Toxic shock syndrome caused by
 - a) Staphylococcus epidermidis
 - b) Staphylococcus aureus
 - c) Staphylococcus intermedius
 - d) None of these
- (iii) Name the pathogen that causes Pneumonia disease
 - a) Haemophilus influenzae
 - b) Salmonella typhi
 - c) Myxovirus influenzae
 - d) Bordetella pertussis
- (iv) Main symptom of tuberculosis indicates
 - a) Tubercle formation
 - b) Liquid formation
 - c) Tubercle formation and Liquid formation
 - d) None of these
- (v) Select the following pathogenic organism is capable of living inside the living cell only(obligate intracellular pathogen)
 - a) Salmonella
 - b) Mycobacterium
 - c) Rickettsia
 - d) Vibrio
- (vi) Indicate the causative agent of Syphilis
 - a) Treponema pallidum
 - b) Corynebacterium diphtheriae
 - c) Neisseria meningitides
 - d) none of these
- (vii) Examine the age group in Diphtheria
 - a) Above 10 years
 - b) Below 5 years
 - c) Adults
 - d) Above 60 years
- (viii) Evaluate the medication that is commonly given to treat Leprosy

- a) Ibuprofen
c) Ciprofloxacin
- b) DDS (diamino-diphenyl sulphone)
d) Isotretinoin
- (ix) Establish the STDs that has a cure
- a) AIDS
c) Genital herpes
- b) Chlamydia
d) Hepatitis-B
- (x) Apply the following agent is used to disinfect skin
- a) Chlorine
c) Quaternaries
- b) Formaldehyde
d) Ethylene oxide
- (xi) Select the name of enzyme that has the ability to bind antibodies?
- a) Coagulase
c) Protein A
- b) Streptokinase
d) Hydrogen Peroxide
- (xii) Laboratory test that is used to diagnose diphtheria
- a) Gram stain
c) Elek test
- b) Blood culture
d) Acid-fast stain
- (xiii) Find it is important to administer antibiotics promptly in cases of bacterial meningitis
- a) To prevent the spread of the bacteria to others
c) To reduce the risk of severe complications and death
- b) To avoid antibiotic resistance
d) To decrease the cost of treatment
- (xiv) Choose the purpose of the Quellung reaction in identifying pneumococcal infections
- a) It identifies the type of pneumococcal strain based on capsule swelling
c) It measures bacterial cell wall thickness
- b) It detects the presence of pneumococcal toxins
d) It determines antibiotic susceptibility
- (xv) Important factors to administer antibiotics promptly in cases of bacterial meningitis
- a) To prevent the spread of the bacteria to others
c) To reduce the risk of severe complications and death
- b) To avoid antibiotic resistance
d) To decrease the cost of treatment

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Mention any two factors that influence the composition of normal flora. (3)
3. Explain septic shock and its association with bacterial endotoxin (3)
4. Analyze and formulate a diagnostic approach for the detection of Haemophilus influenzae from clinical specimens. (3)
5. Define extended-spectrum beta-lactamase (ESBL) production (3)
6. Evaluate PCR as a diagnostic tool compared to conventional methods for infectious diseases. (3)

OR

Evaluate the diagnostic relevance of non-specific laboratory tests in clinical infections. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Name the predominant normal flora present in the skin, oral cavity, intestinal tract, and urogenital tract. (5)
8. Describe the structure and functions of bacterial adhesins and explain their importance in virulence. (5)
9. Explain the differences between endogenous and exogenous infections with appropriate examples. (5)
10. Critically analyze and justify the integration of conventional and modern diagnostic approaches in microbiology, highlighting the strengths and limitations of specimen (5)

processing, microscopy, culture, biochemical, serological, and molecular techniques.

11. Examine community-based vaccination strategies and analyze their role in controlling bacterial diseases. (5)
12. Evaluate the clinical importance of *Clostridioides difficile* infection and assess current approaches for its prevention and treatment. (5)

OR

Critically assess antimicrobial resistance in *Neisseria gonorrhoeae* and evaluate its implications for treatment protocols and disease control. (5)

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