

KAMARAJ COLLEGE (Autonomous)

Accredited with A+ Grade by NAAC

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

THOOTHUKUDI – 628 003

(6 Pages)

Reg. No:

Question. Code No : 25E01603

Sub Code : 24PEMB21

PG Degree - End Semester Examinations, April 2025

Second Semester

M.Sc. MICROBIOLOGY

Elective - Clinical and Diagnostic Microbiology

(For those who joined in July 2024 onwards)

Time : 3 Hours

Maximum : 75 Marks

PART – A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

1. _____ Coloured bag is used for disposing of human anatomical waste in biomedical waste management.

(a) Yellow

(b) Red

(c) Blue

(d) Black

2. _____ is a re-emerging disease due to antibiotic resistance.
- (a) Measles (b) Malaria
(c) Rabies (d) Tetanus
3. _____ specimen requires immediate transport without refrigeration.
- (a) Sputum (b) Urine
(c) Cerebrospinal fluid (CSF) (d) Stool
4. _____ transport medium is used for stool specimens.
- (a) Stuart medium (b) Cary-Blair medium
(c) Amies medium (d) Thayer-Martin medium
5. _____ systems is used for automated microbial identification.
- (a) PCR (b) ELISA
(c) VITEK system (d) Lateral flow assay
6. Immunofluorescence techniques are commonly used for diagnosing_____
- (a) Syphilis (b) Escherichia coli infection
(c) Tuberculosis (d) Hepatitis A
7. _____ method allows both qualitative and quantitative analysis of antibiotic effectiveness.
- (a) Kirby-Bauer (b) Stokes
(c) MIC (d) E-test

8. _____ is critical for standardization in Kirby-Bauer antimicrobial testing.
- (a) Inoculum density
 - (b) Incubation
 - (c) Bacterial species
 - (d) Antibiotic concentration
9. _____ organism is frequently associated with catheter-associated UTIs (CAUTI).
- (a) *Staphylococcus epidermidis*
 - (b) *Escherichia coli*
 - (c) *Clostridium perfringens*
 - (d) *Mycobacterium tuberculosis*
10. Ventilator-associated pneumonia (VAP) is most commonly caused by_____
- (a) *Klebsiella pneumoniae*
 - (b) *Candida albicans*
 - (c) *Bacillus subtilis*
 - (d) *Pseudomonas aeruginosa*

PART - B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

11. (a) Describe the general safety guidelines to be followed in a microbiology laboratory.

(OR)

(b) Write a note on the causes and examples of emerging infections.

12. (a) How are clinical samples collected for microbiological analysis?

(OR)

(b) What are the criteria for the rejection of clinical samples?

13. (a) Discuss the types and benefits of automation in microbial diagnosis.

(OR)

(b) Outline the various microbiological methods being applied to diagnose a disease.

14. (a) Write a short note on the procedure and significance of determining Minimum Bactericidal Concentration.

(OR)

- (b) Add a note on types and role of standard strains used in clinical microbiology.
15. (a) State the role and importance of Hospital Infection Control Committee.

(OR)

- (b) What are the common types of nosocomial infection?

PART - C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 600 words.

16. (a) Explain in detail the principles and practices of biomedical waste management.

(OR)

- (b) Elaborate a note on re-emerging infections and their impact on human health.

17. (a) Write a detail note on processing of clinical specimens to determine microbial infection.

(OR)

- (b) Write down the various methods of available to transport and storage of clinical specimen for microbial analysis

18. (a) Explain the role and advancement of modern diagnostic tools in diagnostic microbiology.

(OR)

(b) Summarize the various immunological techniques used in the diagnosis of microbial diseases.

19. (a) Write an essay on various methods of antibiotic susceptibility testing and their importance in diagnostic microbiology.

(OR)

(b) Give a detail account on methods and significance of quality control of antibiotics.

20. (a) Write an elaborate note on the pathogenesis of nosocomial infections and the strategies for their prevention and control in healthcare settings.

(OR)

(b) Give a detailed account on the types, sources, reservoirs and modes of transmission, of nosocomial infections.