

# **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 : 25001614**

**Course Code : 24PEMB21**

**PG Degree - End Semester Examinations, November 2025**

**Second Semester**

**M.Sc. MICROBIOLOGY**

**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. \_\_\_\_\_ color-coded bin is used for disposing infectious sharps (like needles).  
(a) Blue (b) Red  
(c) Yellow (d) White
2. An example of a re-emerging infectious disease is\_\_\_\_\_.  
(a) Smallpox (b) Tuberculosis

- (c) Ebola (d) Polio
3. \_\_\_\_\_ is the ideal time to collect blood for culture.
- (a) After meals (b) Early morning  
(c) During peak fever (d) Before sleeping
4. A properly collected throat swab should be taken from \_\_\_\_\_
- (a) Lips and cheeks (b) Tip of the tongue  
(c) Tonsillar area and (d) Palate  
posterior pharynx
5. \_\_\_\_\_ is an automated diagnostic platform.
- (a) API strips (b) VITEK 2  
(c) Coagulase test (d) Slide agglutination
6. \_\_\_\_\_ is used to detect *Mycobacterium tuberculosis* in a short time.
- (a) Ziehl-Neelsen stain (b) GeneXpert MTB/RIF  
(c) VITEK (d) ELISA
7. In the E-test, the antibiotic gradient is impregnated on a \_\_\_\_\_
- (a) Paper disc (b) Plastic strip  
(c) Glass slide (d) Whatman filter
8. \_\_\_\_\_ quality control strain is commonly used for testing aminoglycoside antibiotics.
- (a) *P. aeruginosa* ATCC 27853 (b) *Enterococcus faecalis*  
ATCC 51299

(c) *S. aureus* ATCC 29213                      (d) *E. coli* ATCC 25922

9. \_\_\_\_\_ is the most common type of nosocomial infection.

(a) Hepatitis A

(b) Meningitis

(c) Surgical site infection

(d) Urinary tract infection  
(UTI)

10. \_\_\_\_\_ bacteria is most associated with hospital-acquired bloodstream infections (BSIs).

(a) *Neisseria meningitidis*

(b) *Staphylococcus aureus*

(c) *Helicobacter pylori*

(d) *Vibrio cholerae*

**PART - B (5 X 5 = 25 Marks)**

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

**Answer should not exceed 250 words.**

11. (a) How will you handle biohazards?

**(OR)**

(b) Illustrate the importance of microbiology lab safety practices.

12. (a) Write a note on transport of clinical specimens.

**(OR)**

(b) What are the criteria to be followed to accept for processing of clinical specimens?

13. (a) What are traditional microbiological techniques being used to identify microbial pathogen?

**(OR)**

(b) Outline the immunological methods available to detect pathogens in clinical sample.

14. (a) Describe the Kirby-Bauer disc diffusion method for antibiotic sensitivity testing of clinical isolates.

**(OR)**

(b) Write a short note on E-test and its significance in diagnostic microbiology.

15. (a) Describe the various sources and reservoirs of hospital-acquired infections.

**(OR)**

(b) Illustrate the different modes of transmission of nosocomial infections.

**PART – C (5 X 8 = 40 Marks)**

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

**Answer should not exceed 600 words.**

16. (a) Explain the types, causes and global impact of emerging and re-emerging infectious diseases.

**(OR)**

(b) Elaborate a note the categories of biomedical waste with examples.

17. (a) Give a detailed note on the collection and storage of microbiological specimens.

**(OR)**

(b) Write down the steps involved in processing of clinical specimens for microbiological analysis.

18. (a) Summarize the various molecular techniques applied in diagnosis of microbial diseases.

**(OR)**

(b) Analyse the various automation systems being applied in disease identification.

19. (a) Write an essay on the role of quality control in antibiotic testing.

**(OR)**

(b) Explain the concepts, procedures and clinical significance of MIC and MBC.

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

**(OR)**

(b) Elaborate the role and functions of the Hospital Infection Control Committee (HICC) in managing hospital-acquired infections.