



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES
BACHELOR OF SCIENCE IN NURSING (BSN)
September-December 2024 TRIMESTER MAIN EXAMINATION**

COURSE CODE AND TITLE: BSN 124- Bacteriology/Mycology

DATE:

TIME: 2 HOURS

START: 9:00AM

END: 11:00AM

Instructions

- 1) This exam is out of 50
- 2) This paper has three sections: Section I: Multiple choice Questions (MCQ) (20 marks), Section II: Short answer questions (SAQ) (30 marks)
- 3) Answer **ALL** questions in Section I and Section II and III
- 4) Answer all the questions in the examination booklets provided
- 5) Any rough work to be done at the back of the answer booklet

SECTION I: MULTIPLE CHOICE QUESTIONS (MCQs)

(20 MARKS):

1. Tissue biopsy revealing brown planate dividing sclerotic bodies: -
 - A. Lobomycosis
 - B. Chromomycosis
 - C. Pheohyphomycosis
 - D. Rhinosporidiosis
2. The following is related to *Salmonella enterica* typhi pathogenesis: -
 - A. Disease manifests in immunocompromised hosts
 - B. Rapidly invades the mesenteric lymphatic system to cause metastatic disease
 - C. Related to production of exotoxins
 - D. Blood specimen is not appropriate for laboratory diagnosis
3. The following is not a virulence factor of *Pseudomonas aeruginosa*: -
 - A. Exotoxin A
 - B. Exotoxin S
 - C. Teichoic acid
 - D. Leucocidin
4. Hemolytic anaemia in *Mycoplasma* infections is due to : -
 - A. Autoimmune reactions due to destruction of I antigens
 - B. Production of hydrogen peroxide by the pathogens
 - C. Secretion of Community-acquired distress syndrome exotoxin
 - D. Direct invasion of tissue
5. Uropathogenic strains of *Escherichia coli* are primarily associated with:-
 - A. Gastrointestinal Infections
 - B. Urinary tract infections
 - C. Pyogenic infections
 - D. Neonatal meningitis
6. Sterilization of antibiotic solutions can be achieved using:-
 - A. Autoclaving
 - B. Incubation in a hot air oven
 - C. Boiling
 - D. Filtration using nitrocellulose filter membrane
7. *Streptococcal agalactiae* is spread: -
 - A. Through respiratory secretions or droplets
 - B. Through contaminated fomites
 - C. Through consumption of contaminated food or water
 - D. By vertical transmission
8. The specific infection sites that develop in primary tuberculosis are known as:-
 - A. Fibroblasts
 - B. Necrotic lesions
 - C. Tubercles

- D. Caseous lesions
9. The following is a limitation of the autoclave: -
- A. It lacks the ability to kill endospores
 - B. It lacks the ability to inactivate viruses
 - C. It will destroy heat labile materials
 - D. It takes too long to sterilize
10. An intertwined mass of hyphae that forms the mold colony is referred to as:-
- A. Anamorph
 - B. Conidia
 - C. Teleomorph
 - D. Mycelium
11. Serological test for syphilis which is suitable for screening a large number of specimens is:
- A. Fluorescent Treponemal antibody absorption test
 - B. Venereal Disease Research laboratory test
 - C. *Treponema pallidum* Haemagglutination assay
 - D. *Treponema pallidum* Immobilization test
12. The most common fungal causative agent of meningitis in immunocompromised patients
- A. *Candida albicans*
 - B. *Malassezia furfur*
 - C. *Cryptococcus neoformans*
 - D. *Coccidioides immitis*
13. The following sterilization method is most suitable for sterilizing surgical blades:-
- A. UV light
 - B. Autoclaving
 - C. Flaming
 - D. Gamma rays
14. Subcutaneous mycoses that present as abscesses with sinus tracts: -
- A. Lobomycosis
 - B. Mycetoma
 - C. Pheohyphomycosis
 - D. Sporotrichosis
15. A urease positive gram negative bacilli is: -
- A. *Escherichia coli*
 - B. *Yersinia enterocolitica*
 - C. *Proteus spp*
 - D. *Pseudomonas aeruginosa*
16. The bacteria that would most likely be associated with incision surgical site infection: -
- A. *Staphylococcus aureus*

- B. *Clostridium tetani*
- C. *Escherichia coli*
- D. *Proteus spp*

17. The following organism causes a disease that can be prevented using the DPT vaccine: -

- A. *Clostridium botulinum*
- B. *Bacillus anthracis*
- C. *Clostridium perfringens*
- D. *Corynebacterium diphtheriae*

18. Common bacterial pathogens causing upper respiratory tract infections is:

- A. *Streptococcus pyogenes*
- B. *Corynebacterium ulcerans*
- C. *Escherichia coli*
- D. *Streptococcus agalactiae*

19. Otomycosis

- A. Mostly occurs in adults
- B. Can result from chronic antibacterial use
- C. Most common organisms are *Epidermophyton* and *Penicillium spp*
- D. Responsible for 10% of acute otitis externa

20. Bloody diarrhoeal stool may be observed in infections by the following organisms except:

- A. *Shigella dysenteriae*
- B. *Vibrio cholerae*
- C. *Yersinia enterocolitica*
- D. *Escherichia coli*

SECTION II: SHORT ANSWER QUESTIONS (30 MARKS)

1. With regards to the genus *Neisseria*;
 - a) State two (2) pathogenic species of the genus *Neisseria* (2 marks)
 - b) Choose one (1) of the agents listed above and describe its transmission, pathogenesis and clinical manifestations (8 marks)
2. Describe the clinical manifestations of infection and treatment of cholera (5 marks)
3. Mention two (2) laboratory characteristics of *Bacillus anthracis*, and 3 clinical manifestations of infection (5 marks)
4. State three (3) causative agents of Ringworm infection and mention 2 agents used for treatment (5 marks)
5. Outline one (1) medically important species of *Staphylococcus* and describe the mode of action of four (4) of its virulence factors (5 marks)

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