



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES
BACHELOR OF SCIENCE IN NURSING (BSN)
END OF SEMESTER EXAMINATIONS**

UNIT CODE: BSN 124

UNIT NAME: BACTERIOLOGY/MYCOLOGY

DATE: 30TH NOVEMBER 2022

TIME: 2 Hours Start: 9.00AM Finish: 11.00PM

INSTRUCTIONS

1. This exam has Section A: Multiple Choice Questions (20 marks) and Section B: Short Answer Questions (30 marks).
2. All questions are compulsory
3. All answers must be written in blue/black ink

SECTION A

1. The following reagent is used in the Gram staining procedure
 - A. India ink
 - B. Auramine phenol
 - C. Safranin
 - D. Malachite green

2. The following are examples of gram-positive bacteria EXCEPT
 - A. *Streptococcus agalactiae*
 - B. *Corynebacterium diphtheriae*
 - C. *Bacillus anthracis*
 - D. *Pseudomonas aeruginosa*

3. Bacteria commonly associated with Ophthalmia Neonatorum can be identified using
 - A. Simple microscopy technique
 - B. Blood agar culture
 - C. Gram staining technique
 - D. Polymerase chain reaction

4. The following is an example of a fungal mold
 - A. *Epidermophyton floccosum*
 - B. *Sporothrix schenckii*
 - C. *Candida glabrata*
 - D. *Histoplasma capsulatum*

5. *Malassezia furfur* is associated with
 - A. Stratum corneum infection
 - B. Lipophobic tissue infection
 - C. Patchy discoloration of lower limb region
 - D. Flat black macular patchy lesions on palm

6. Antifungal agent that can be used for treating ringworm infection on the scalp
- A. Ketoconazole
 - B. Caspofungin
 - C. Butenafine
 - D. Nystatin
7. *Salmonella enterica* Typhi
- A. Express O, H and Vi antigen
 - B. Is causative agent of bacillary dysentery
 - C. Is gram positive bacilli
 - D. Vancomycin can be used as drug of choice
8. *Shigella dysenteriae*
- A. Is a gram-positive rod
 - B. Infections can be prevented by vaccination
 - C. Pathogenesis is similar to Enteroinvasive *E. coli* (EIEC)
 - D. Pathogenesis is similar to Enterotoxigenic *E. coli*
9. Inhibition of pulmonary ciliary function in *Pseudomonas aeruginosa* infection is mediated by
- A. Capsule
 - B. Elastase
 - C. Pyocyanin
 - D. Pili
10. Hospital-acquired diarrhoea is mostly associated with?
- A. *Bacillus anthracis*
 - B. *Clostridium difficile*
 - C. *Pseudomonas aeruginosa*
 - D. *Acinetobacter baumannii*
11. *Clostridium perfringens* is associated with the following EXCEPT

- A. Food-related diarrheal illness
 - B. Wound infection
 - C. Inhibition of nerve impulse transmission
 - D. Toxin production
12. Why is there an increase in antibiotic resistance among the *Salmonella* bacteria
- A. New strains of these organisms are emerging
 - B. The organism is naturally resistant to most antibiotics
 - C. Most of the patients infected with the bacteria do not know
 - D. The practice of adding antibiotics to animal feeds
13. *Black piedra*
- A. Is associated with hard nodules on the hair shaft
 - B. Is caused by *Trichosporon* species
 - C. Affects the stratum corneum
 - D. Causes patchy skin discoloration
14. *Pseudomonas* species is associated with the following **EXCEPT?**
- A. Blood transfusion reaction
 - B. Pigment production
 - C. Dissemination and systemic infection
 - D. Is part of the normal flora in healthy individuals
15. Which method of gene transfer involves direct contact between the bacteria
- A. Conjugation
 - B. Transduction
 - C. Transformation
 - D. Programmed rearrangements
16. How is *Streptococcus agalactiae* spread
- A. Through respiratory secretions or droplets
 - B. Through consumption of contaminated food or water
 - C. By insect vectors
 - D. By vertical transmission
17. Cholera toxin

- A. Increases the levels of intracellular cyclic GMP
- B. Inhibits the protein synthesis
- C. Causes continued activation of adenylate cyclase
- D. Blocks the release of acetylcholine in synapses

18. Bacterial pathogen frequently associated with nosocomial infections transmitted via use of medical devices in patients

- A. *Staphylococcus epidermidis*
- B. *Streptococcus pyogenes*
- C. *Escherichia coli*
- D. *Clostridium perfringens*

19. Which of the following is the correct order of bacterial pathogenesis

- A. Disease, adhesion, exposure, invasion
- B. Invasion, infection, adhesion, exposure
- C. Exposure, adhesion, invasion, infection
- D. Disease, infection, exposure, invasion

20. A confirmatory serological tests for syphilis

- A. Rapid Plasma Reagin (RPR) test
- B. Venereal disease research laboratory (VDRL) test
- C. Widal test
- D. *Treponema pallidum* haemagglutination assay (TPHA)

SECTION B

1. Giving an example of an agent in each class, list five (5) classes of antifungal agents and briefly state the mechanism of action (5 marks)
2. Briefly discuss clinical pathogenesis and manifestation of *Corynebacterium diphtheriae* in bullneck diphtheria (5 marks)
3. Write short notes on *Salmonella* Typhi under the following sub-headings:
 - a) Clinical pathogenesis (2 marks)
 - b) Clinical features (1.5 marks)
 - c) In relation to (a) and (b), name the different laboratory tests to request for processing (1.5 mark)
4. Briefly discuss specimen type, collection and transportation in a suspected *Clostridium tetani* wound infection (5 marks)
5. Discuss prevention of nosocomial infection in a surgical ward (10 marks)