



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES
End of Semester August 2025 Main Examinations

COURSE CODE BSM 211-TITLE: Medical Microbiology ~~And~~ and Parasitology

ONLINE MAIN EXAM

DATE:

Duration: 2 HOURS

Start:

Finish:

INSTRUCTIONS

1. This exam is out of 70 marks
2. This Examination comprises THREE Sections. Section I: Multiple Choice Questions (20 marks)
Section II: Short Answer Questions (30 marks) and Section III: Long Answer Questions (20 marks)
3. Answer ALL Questions.
4. Do Not write anything on the question paper -use the back of your booklet for rough work if need be.

SECTION I: MULTIPLE CHOICE QUESTIONS

(20 MARKS)

1. Penicillin was discovered by
 - a) Fleming
 - b) Pasteur
 - c) Koch
 - d) None of these
2. Neisseria species are generally classified as:
 - a) Gram-positive cocci
 - b) Gram-negative cocci
 - c) Gram-positive bacilli
 - d) Gram-negative bacilli
3. Endotoxin produced by gram negative bacteria is present in
 - a) Peptidoglycan
 - b) Lipopolysaccharide
 - c) Teichoic acid
 - d) Inner membrane
4. What is the function of beta-lactamase in antibiotic resistance?
 - a) It inhibits bacterial DNA replication
 - b) It breaks down penicillin and related antibiotics
 - c) It disrupts bacterial protein synthesis
 - d) It enhances the permeability of the bacterial cell wall
5. A group of six children younger than 8 years of age live in a semitropical country. Each of the children has several crusted weeping skin lesions of impetigo (pyoderma). The lesions are predominantly on the arms and faces. Which of the following microorganisms is a likely cause of the lesions?
 - a) Escherichia coli
 - b) Chlamydia trachomatis
 - c) S aureus
 - d) Streptococcus pneumonia
6. What distinguishes Gram-positive from Gram-negative bacteria during Gram staining?
 - a) Thickness of the peptidoglycan layer
 - b) Amount of phospholipid in the membrane
 - c) Presence of a flagella
 - d) Presence of pili
7. Which form of anthrax is considered the most lethal?
 - a) Cutaneous anthrax
 - b) Gastrointestinal anthrax
 - c) Inhalation anthrax
 - d) Injection anthrax
8. Bactericidal agents
 - a) Kill bacteria
 - b) Prevent bacterial multiplication
 - c) Both of above
 - d) None of the above

9. Which of the following is not a method of dry heat sterilization
 - a) Flaming
 - b) Hot air oven
 - c) Incineration
 - d) Pasteurization
10. BCG vaccine is for the prevention of
 - a) Brucellosis
 - b) Diphtheria
 - c) Botulism
 - d) Tuberculosis
11. Which of the following is an example of a pathogenic fungus?
 - a) Penicillium
 - b) Candida albicans
 - c) Aspergillus
 - d) Saccharomyces cerevisiae
12. The normal flora of the vagina is primarily dominated by which bacterial genus?
 - a) Bacteroides
 - b) Lactobacillus
 - c) Clostridium
 - d) Escherichia
13. What is the role of macrophages in the immune system?
 - a) Produce antibodies
 - b) Engulf and digest pathogens
 - c) Activate platelets
 - d) Regulate blood sugar levels
14. Which immunoglobulin is the first to be produced during an immune response?
 - a) IgE
 - b) IgM
 - c) IgG
 - d) IgA
15. Which of the following virus affects the liver?
 - a) HSV
 - b) EBV
 - c) HAV
 - d) HIV
16. The viral nucleocapsid is the combination of
 - a) genome and capsid
 - b) capsid and spikes
 - c) envelope and capsid
 - d) capsomere and genome
17. Virus reproduces in living cells by
 - a) replication
 - b) duplication
 - c) multiplication
 - d) all of these

18. A parasite that lives within another living organism is called
- Obligate parasite
 - Facultative parasite
 - An endoparasite
 - An ectoparasite
19. Which parasitic infection is often associated with fecally contaminated water (fecal-oral) or food?
- Cryptosporidium
 - Giardia
 - Toxoplasma
 - All of these
20. Man is intermediate host for
- Guinea Worm
 - Malaria
 - Filaria
 - Kala-azar

SECTION II: SHORT ANSWER QUESTIONS (30 MARKS)

- Briefly describe the theory of spontaneous generation. (6 marks)
- State **six (6)** symptoms of tuberculosis. (6 marks)
- State **three (3)** differences between innate immunity and adaptive immunity. (6 marks)
- Outline fungus classification based on morphology. (6 Marks)
- Briefly explain **two (2)** forms of a sexual reproduction in a protozoa. (6 marks).

SECTION III: LONG ANSWER QUESTION (20 MARKS)

- Discuss **three (3)** Toxin-mediated *Staphylococcus aureus* (12 marks)
- Describe steps in viral replication. (8 marks)