



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2022/2023 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES**

**COURSE CODE: BML 117**

**COURSE TITLE: HIV/AIDS AND STI EDUCATION**

**DATE: 19<sup>TH</sup> APRIL 2023**

**TIME: 8:00-10.00AM**

**INSTRUCTIONS TO CANDIDATES**

This paper is divided into three sections, **A B** and **C**, carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**). Answer all questions. **DO NOT WRITE ON THE QUESTION PAPER.**

**TIME: 2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over. ►

## SECTION A: Multiple Choice Questions (20 Marks)

- Which of the following is NOT a cause of secondary immunodeficiency
  - Lack of T cells due to mutations which arrest development of the thymic epithelium
  - Malnutrition
  - Trauma
  - HIV
- HIV initially infects cells expressing
  - CD1
  - CCR5
  - CD8
  - CD36
- Which of the following is NOT a likely reason for the reduction in CD4 T cell numbers characteristic of AIDS
  - Persistent immune over activation leading to apoptosis
  - Lysis of infected cells by HIV
  - Reduced generation of T cells in the thymus
  - Over production of regulatory T cells
- Common opportunistic infections in patients with reduced antibody responses are
  - Influenza
  - Intestinal helminths
  - Encapsulated bacteria
  - Atypical mycobacteria
- Another pathogen which typically causes immune deficiency and increases the risk of secondary infection is
  - Measles virus
  - Toxoplasma
  - Candida albicans
  - Rabies virus
- Combination chemotherapy (HAART) is now used to treat patients with HIV because of which two factors?
  - Drug resistant mutants arise too quickly with monotherapy
  - This is cheaper than consecutive treatments with monotherapy
  - There is synergism between anti HIV drugs may not work at different stages of the life cycle
  - HAART is also active versus HTLV-1 and HTLV-II
- There is no vaccine against HIV because of which of the following?
  - The virus is so antigenically variable
  - Such a vaccine would be too expensive
  - The virus can be controlled by a change in sexual habits
  - Latency can abrogate any vaccine effect
- What does the matrix protein p17 do?
  - It helps anchor the envelope proteins to the rest of the virus.
  - It allows the virus to attach to a host cell.
  - It allows the virus to enter a host cell.
  - It converts viral RNA into DNA.
- What stage of the virus' life cycle comes after reverse transcription?
  - Replication
  - Integration
  - Entering the cell
  - Transcription

10. HIV is a \_\_\_\_\_
- Lentivirus
  - Capripoxvirus
  - Gallivirus
  - Papillomavirus
11. Simian immunodeficiency virus is known to affect
- non-human primates
  - Birds
  - Rabbits
  - None of the above
12. Which of the following is a symptom of AIDS?
- Fever
  - Swollen lymph nodes
  - Tiredness
  - All of the above
13. The first ever instance of AIDS was reported in
- USA
  - France
  - Russia
  - None of the above
14. Which of following group of organisms includes the pathogens most often identified as causing acute epididymitis in men who have sex with men?
- Neisseria gonorrhoeae*, *Treponema pallidum*, and *Mycoplasma genitalium*
  - Chlamydia trachomatis*, *Proteus* species, and *Staphylococcus aureus*
  - Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Escherichia coli*
  - Mycoplasma genitalium*, *Trichomonas vaginalis*, and *Ureaplasma urealyticum*
  - Escherichia coli*, *Proteus mirabilis*, and *Klebsiella pneumoniae*
15. Which of the following are the most common causes of genital ulcers among young sexually active persons with HIV?
- Chancroid and syphilis
  - Herpes simplex virus (HSV) and chancroid
  - Herpes simplex virus (HSV) and syphilis
  - Lymphogranuloma venereum (LGV) and herpes simplex
  - Lymphogranuloma venereum (LGV) and chancroid
16. Which one of the following is a recommended antimicrobial treatment for chancroid?
- Doxycycline 100 mg orally twice daily for 7 days
  - Doxycycline 100 mg orally twice daily for 14 days
  - Benzathine penicillin G 2.4 million units as a single intramuscular dose
  - Azithromycin 1 g orally as a single dose
17. Which one of the following is the most sensitive test for the diagnosis of chlamydia urethritis?
- Midstream void urine culture
  - First-void urine culture
  - Urethral swab for enzyme immunoassay (EIA)
  - First-void urine nucleic acid amplification test (NAAT)
18. This stage is found to be the most infective stages of all
- secondary syphilis stage
  - tertiary syphilis stage
  - primary syphilis stage
  - all of these

19. Syphilis is a complicated and organized sexually transmitted disease where the causative agent is
- a fungus
  - a virus
  - a parasite
  - a spirochete
20. Neurosyphilis is
- an infection of the liver due to syphilis
  - a major illness of the eyes of babies due to syphilis
  - an infection of the kidneys due to syphilis
  - a major illness of the nervous system due to syphilis

**SECTION B: SHORT ANSWER QUESTIONS – 40 Marks**

- Outline the general morphological and genomic structure of HIV (8 marks)
- Explain the essential package for PLWHA care and management (8 marks)
- Describe the diagnostic tests for HIV (8 marks)
- Describe the common causes of genital ulcers (8 marks)
- Outline common causes of vaginal discharge

**SECTION C: LONG ESSAY QUESTIONS - 60 Marks**

- With relevant examples, discuss the major classes of ART in managing HIV infection and aggression (20 marks).
- Describe the clinical presentation and management and preventive strategies of Tuberculosis as opportunistic infection among PLWHA (20 marks)
- Explain the clinical features and diagnosis for scrotal swelling syndrome (20 marks)