



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
FIRST YEAR FIRST TRIMESTER**

**SCHOOL OF PURE, APPLIED AND HEALTH
SCIENCES
BACHELOR OF SCIENCE IN FOODS, NUTRITION,
AND DIETETICS**

COURSE CODE: FND 1208

COURSE TITLE: NUTRITION AND HIV/AIDS

DATE: 21/5/24

TIME:0230-0430HRS

INSTRUCTION TO CANDIDATES

Section A: Multiple Choice Questions. Answer ALL Questions

Section B: Short Answer Questions. Answer ALL Questions

Section C: Long Answer Questions. Answer Question ONE and any other ONE question.

This paper consists of 6 printed pages. Please turn over.

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS) SELECT THE CORRECT ANSWER.

1. What group of ART drugs act by stopping an enzyme from cutting the long chains of virus so the immature virus can't be assembled and mature?
 - A. Protease Inhibitors
 - B. Integrase Inhibitors
 - C. Nucleoside Reverse Transcriptase Inhibitors
 - D. Attachment Inhibitors

2. Which of these is a symptom of HIV infection?
 - A. Swollen lymph nodes
 - B. Fever
 - C. Tiredness
 - D. All of the above

3. A person has AIDS when which of these occurs?
 - A. Exposure to HIV
 - B. HIV antibodies are found in the blood
 - C. The CD4+ count is lower than 200 or opportunistic infections develop in an HIV-infected person
 - D. A person has HIV for 5 years

4. What does HIV-positive mean?
 - A. Either antibodies against HIV or the virus particles themselves are present in the blood
 - B. B. You have been tested for HIV
 - C. Your white cell count is high
 - D. You have been informed about HIV

5. HIV attacks a certain kind of cell in the immune system. Which is it?
 - A. Red blood cells
 - B. White blood cells called T cells
 - C. Platelets
 - D. Epithelial cells

6. What is the CD4 T-cell count at which AIDS is considered to have developed?

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- A. Below 1,000 per cubic milliliter
 - B. Below 500 per cubic milliliter
 - C. Below 200 per cubic milliliter
 - D. Below 50 per cubic milliliter
7. The risk for HIV/AIDS is tied to behaviors. Which of these behaviors can put you at risk?
- A. Spending time with someone who has AIDS
 - B. Not wearing latex condoms during sex
 - C. Injecting drugs
 - D. B and C
8. Why is a combination of medicines—called a cocktail—used to treat HIV?
- A. The virus changes (mutates) rapidly
 - B. Each person responds to each medicine differently
 - C. Combining medicines triples their strength
 - D. A and B
9. What is the best way to protect yourself against HIV?
- A. Get yourself vaccinated for HIV
 - B. Use birth control pills
 - C. Use a latex condom during sexual intercourse
 - D. B and C
10. The Human Immunodeficiency Virus (HIV) can NOT be spread in what type of fluid below? Select all that apply:
- A. Breastmilk
 - B. Blood
 - C. Tears
 - D. Semen
11. Which statement below is not true regarding the role of the helper t cell?
- A. The helper T cell releases cytokines to help activate other immune system cells.
 - B. The helper T cell is part of the adaptive immune system.
 - C. The helper T cell is cytotoxic and kills invaders.
 - D. The helper T cell has CD4 receptors found on its surface.
12. Identify the correct statements about the anatomy of the Human Immunodeficiency Virus (HIV). Select all that apply:

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- A. HIV is not a retrovirus.
- B. Inside the virus is packaged DNA.
- C. The protein projections found on the virus' surface play a key role in attaching to the receptors on the helper t-cell.
- D. The glycoproteins (specifically GP140) are vital for engaging the receptors on the targeted cell.

13. The first step in the "Lifecycle of HIV" is the attachment step. During this step what co-receptors are also targeted so entry can be gained inside the cell?

- A. CCR5 or CXCR4
- B. CD4 or CD2
- C. CCR4 or CXCR5
- D. CD8 or CD5

14. What step in the "Lifecycle of HIV" does the Human Immunodeficiency Virus (HIV) become united with the targeted cell and dumps its contents into that cell?

- A. Integration
- B. Fusion
- C. Budding
- D. Assembly

15. Which statement below best describes the role of reverse transcriptase?

- A. It's an enzyme that helps cut up the long protein chains of HIV.
- B. It plays a key role in the maturity of the virus.
- C. Reverse transcriptase is an enzyme that turns viral RNA into viral DNA.
- D. Reverse transcriptase is an enzyme that allows the viral DNA to become part of the cell's DNA.

16. Fill in the blank: Once inside the nucleus of the cell, the Human Immunodeficiency Virus (HIV) needs to become part of the cell's DNA. To do this, the virus releases an enzyme called _____.

- A. Protease
- B. Reverse transcriptase
- C. Kinase
- D. Integrase

17. What enzyme is responsible for cutting long chains of virus to help prep the HIV for maturity?

- A. Integrase

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- B. Protease
- C. Reverse transcriptase
- D. Kinase

18. The physician orders a combination HIV antigen/antibody test on a patient. The patient was potentially exposed to HIV 3 weeks ago. What HIV antigen does this test assess for?

- A. GP120
- B. p24
- C. GP41
- D. P35

19. Which HIV test can give the earliest test results?

- A. Nucleic Acid Test (NAT)
- B. Antibody HIV Test
- C. Combination HIV antigen/antibody test
- D. CD4 count

20. A patient, who is in the Chronic Stage of HIV, has a CD4 count ordered. What does this test measure?

- A. Red blood cells
- B. B cells
- C. Cytotoxic T cells
- D. Helper T cells

SECTION B: SHORT ANSWER QUESTIONS (40 MARKS). ANSWER ALL QUESTIONS.

1. Explain the meaning of the following abbreviations. **(5 Marks)**
 - a) HIV/AIDS
 - b) ARV
 - c) PLHIV
 - d) TB
 - e) STD
2. In people living with HIV there is increased nutrient needs due to? **(5 marks)**
3. State the causes of reduced food intake among PLHIV? **(5 marks)**
4. Outline the methods of HIV transmission from one person to another? **(4 marks)**
5. State the aims of nutritional management in HIV/AIDS? **6 marks**
6. Write short notes on protein requirement among PLHIV. **5 marks.**
7. Outline micronutrient deficiencies that are common among HIV infected individuals? How do we mitigate this? **5 marks.**
8. TB is an opportunistic infection common among PLHIV. State the symptoms associated with TB? **5 marks.**

SECTION C: LONG ANSWER QUESTIONS (40 MARKS). QUESTION ONE IS COMPULSORY, THEN CHOOSE EITHER QUESTION 2 OR 3.

1. Discuss the nutrients requirement in PLHIV. **(20 marks)**
2. The risk for HIV/AIDS is closely associated with behaviors. Discuss. **(20 marks)**
3. In addition to poverty, overcrowding and HIV, poor nutrition has contributed to a global problem of TB “TRIPPLE TROUBLE”. Discuss. **(20 marks)**

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