

1<sup>ST</sup> SEM, 2009/2010



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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME : BACHELOR OF SCIENCE IN**  
**AGRICULTURE AND BIOSYSTEMS**  
**ENGINEERING, AGRICULTURAL**  
**ECONOMICS AND MANAGEMENT,**  
**AGRICULTURAL EDUCATION AND**  
**EXTENSION, AGRONOMY, ANIMAL**  
**SCIENCE, AGRICULTURAL**  
**ECONOMICS AND AGRIBUSINESS**  
**MANAGEMENT, CONSUMER**  
**SCIENCE, CONSUMER SCIENCE**  
**EDUCATION, FOOD SCIENCE**  
**AND NUTRITION TECHNOLOGY,**  
**HORTICULTURE, TEXTILE AND**  
**APPAREL DESIGN MANAGEMENT,**  
**YEAR I**

**COURSE CODE : AGRIC 101**

**TITLE OF PAPER : HIV AND AIDS**

**TIME ALLOWED : TWO (2) HOURS**

**INSTRUCTION : ANSWER ALL THE QUESTIONS**

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**GRANTED BY THE CHIEF INVIGILATOR**

**QUESTION 1 COMPULSORY**

- A.
- i) With the aid of a clearly labelled diagram, present the biochemical events that occur during host cell infection and subsequent replication of the human immunodeficiency virus (HIV) (10)
  - ii) Identify the areas where the antiretroviral drugs work to prevent multiplication of HIV. (3)
  - iii) Name two antiretroviral drugs you know. (2)

**(15 marks)**

**Multiple Choice Questions**

- B. Select the most appropriate answer, e.g. 11. e
- 1. Transmission of HIV from an infected individual to another occurs
    - a. most commonly as a result of sexual contact
    - b. in all infants born to women with HIV infection
    - c. only when there is a large viral load in the blood
    - d. frequently in health care workers with needle-stick exposures
  - 2. Following infection with HIV
    - a. the virus replicates mainly in B lymphocytes before spreading to CD4<sup>+</sup> T cells in lymph nodes
    - b. the immune system is impaired predominantly by infection and destruction of CD4<sup>+</sup> T cells
    - c. infection of monocytes may occur, but these cells are destroyed by antibodies produced by oligodendrocytes
    - d. within 2 to 3 days a long period develops during which the virus is not found in the blood and there is little viral replication

3. Which of the following statements is false?
- infection with HIV results in a chronic disease with acute exacerbations
  - untreated HIV infection can remain in the early chronic stage for a decade or more
  - late-stage infection is often called acquired immuno-deficiency syndrome (AIDS)
  - opportunistic diseases occur more often when the CD4<sup>+</sup> T cell count is high and the viral load is low
4. A diagnosis of AIDS is made when an HIV-infected patient has
- a CD4<sup>+</sup> T cell count below 200/ $\mu$ l
  - an increasing amount of HIV in the blood
  - a reversal of the CD4:CD8 ratio to less than 2:1
  - oral hairy leukoplakia, an infection caused by Epstein-Barr virus
5. Screening for HIV infection generally involves
- laboratory analysis of blood to detect HIV antigen
  - electrophoretic analysis of HIV antigen in plasma
  - laboratory analysis of blood to detect HIV antibodies
  - analysis of lymph tissues for the presence of HIV RNA
6. Antiretroviral drugs are used to
- cure acute HIV infection
  - treat opportunistic diseases
  - decrease viral RNA levels
  - supplement radiation and surgery

7. Opportunistic diseases in HIV infection
- usually occur one at a time
  - are generally slow to develop and progress
  - occur in the presence of immunosuppression
  - are curable with appropriate pharmacologic intervention
8. Which of the following statements about metabolic side effects of ART is false?
- these are an annoying set of symptoms that are ultimately harmless
  - changes in body shape and size are often difficult for HIV-infected patients to accept
  - lipid abnormalities include increases of triglycerides and decreases in high-density cholesterol
  - insulin resistance and hyperlipidemia can be treated with drugs to control blood glucose and decrease cholesterol
9. Which of the following eliminates the risk of transmission of HIV?
- using sterile equipment to inject drugs
  - cleaning equipment used to inject drugs
  - taking zidovudine (AZT, ZDV, Retrovir) during pregnancy
  - using latex barriers to cover genitals during sexual contact
10. Of the following, which is the most appropriate nursing intervention to help an HIV-infected patient adhere to the treatment regimen?
- give the patient a videotape and a brochure to view and read at home
  - volunteer to "set up" a drug pillbox for a week at a time
  - inform the patient that the side effects of the drugs are bad but that they go away after a while
  - assess the patient's lifestyle and find adherence cues that fit into the patient's lifestyle

(10)

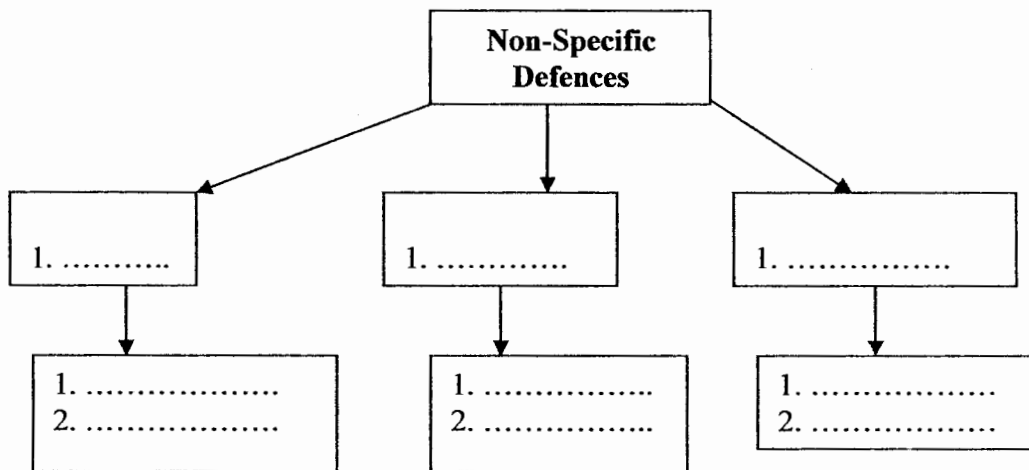
(25 marks)

**Total Marks (40 Marks)**

**QUESTION 2**

A.

- i) Name the latest HIV prevalence in Swaziland. (1)
- ii) There are theories of origin of the HI virus; explain them. (4)
- iii) Fill in the names of the major non specific immunity. (9)



(9)

**B. True or False Answers**

Can the following sexual behaviours lead to the transmission of HIV.

- i) incest
- ii) masturbation
- iii) voyeurism
- iv) frotteusexual
- v) necrophilia
- vi) sodomy
- vii) oral sex
- viii) pedophilia
- ix) masochism
- x) exhibitionism
- xi) zoophilia

(11)

(25 marks)

**Total Marks (30 Marks)**

**QUESTION 3**

**a) Plants are for human consumption and trees are for timbers, house construction and crafts, among other uses and have no role in the management of HIV and AIDS. Discuss the above statement. (15 marks)**

**b) Describe the importance of nutrition in managing HIV and AIDS. (15 marks)**

**Total Marks (30 Marks)**