

UNIVERSITY OF FORT HARE

GENERAL MICROBIOLOGY

HONOURS EXAMINATIONS

MAY/JUNE

YEAR

2023

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Time: 3 hours

Subject: MIC 511

Marks: 100

This paper consists of 3 pages including the cover page

Internal Examiners

Prof AI Okoh

External Examiners
(If externally moderated)
Prof E Green

INSTRUCTIONS

Answer all questions.

MAY/JUNE 2023 HONOURS EXAMINATION

Question 1 (20 marks)

- (a) How would you define systemic mycosis? (4 marks)
- (b) *Cryptococcus neoformans*, *Candida albicans* and *Cladosporium fulvum* are known fungal pathogens. Describe how they cause infection. (10 marks)
- (c) List three causes of antifungal resistance. (6 marks)

Question 2 (20 marks)

- (a) The table below contains a list of microbial pathogens known to cause sexually transmitted diseases. Write the name of the disease they cause in the space provided. (6 marks)

Name of pathogens	Disease they cause
Human papilloma virus	
Herpes Simplex virus	
Hepatitis B virus	
<i>Neisseria gonorrhoeae</i>	
<i>Treponema pallidum</i>	
<i>Trichomonas vaginalis</i>	

- (b) Chlamydia is known to be one of the major sexually transmitted diseases. Discuss. (10 marks)
- (c) Describe the ways by which sexually transmitted diseases can be prevented. (4 marks)

Question 3 (20 marks)

- (i) Hospital acquired infections (HAI) has become a topical issue in health care. Describe the different types of this group of infections with respect to site of infection. (8 marks)
- (ii) Describe the steps involved in the surveillance of nosocomial infections. (10 marks)

Question 4 (10 marks)

Viruses are ubiquitous and require a host to replicate themselves. Describe the process of virus replication. (10 marks)

Question 5 (20 marks)

- (i) A pure culture of a known bacteria was inoculated into a fresh sterile nutrient broth and incubated appropriately to allow the bacteria to grow and exhaust the nutrients in the medium. With the aid of a diagram, describe the patterns of growth in this batch culture system. (10 marks).

- (ii) Microorganisms have different oxygen requirements for optimum growth. Describe the classification of microorganisms based on their oxygen requirement. *(10 marks)*

Question 6 (10 marks)

- (i) How many toxicants are in the list of priority toxicants developed by EPA in 1977? *(1 mark)*
- (ii) List the sources of priority toxicants in the environment. *(4 marks)*
- (iii) List five strategies to combat priority toxicants in the aquatic environment. *(5 marks)*