AFRICA UNIVERSITY
(A United Methodist-Related Institution)

"I nesting in Africa's Future"

FACULTY OF HEALTH SCIENCES

2015 FIRST SEMESTER FINAL EXAMINATIONS

COURSE CODE: MLS 204

COURSE TITLE: Bacteriology Theory

DATE: November 2015

TIME: 3 hours

INSTRUCTIONS

The paper comprises of seven questions.

Each question has a total of 25 marks.

Answer any four questions of your choice.

Credit will be given for logical, systematic and neat presentations.

1. **Giving examples, write short notes on the following**
   a) Spherical bacteria (8)
   b) Rod shaped bacteria (5)
   c) Vibrio (4)
   d) Spirilla (4)
   e) Spirochaetes (4)

2. **a) Using two named examples, describe and explain the differences and/or similarities in cell wall structure and function of gram positive and gram negative bacteria (12)**
   b) Give a detailed account of the structure and function of the cytoplasmic membrane and mesosomes (8)
   c) Describe the structures that store genetic information in a bacteria cell. Explain the function of each (5).

3. **Give a detailed account on the morphology, diagnostic characteristics, virulence factors and pathogenesis caused by species of the genus *Staphylococcus* and *Streptococcus* (25).**

4. **Write short notes on the following**
   a) Vancomycin resistant-enterococci (5)
   b) Multi-resistant gram negative bacteria (5)
   c) Elementary theory of bacterial growth (10)
   d) Methicillin resistant and methicillin sensitive *Staphylococcus aureus* (5)

5. **a) Define antibiotics and describe their mode of action (12)**
   b) Giving examples, discuss how bacteria acquire resistance to antibiotics and how the resistance is measured (13).

6. **Write an essay on bacteria classification systems (25)**

7. **a) What are the benefits of normal flora? (5)**
   b) List five human enteric pathogens (5).
   c) Give a summary of Robert Koch's postulates (4)
   d) Write an essay on the factors involved in bacterial adherence to mucosal surfaces (11).