



## MERU UNIVERSITY COLLEGE OF SCIENCE & TECHNOLOGY

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### University Examinations 2012/2013

FIRST YEAR, SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF  
BACHELOR OF SCIENCE IN PUBLIC HEALTH

**AFS 2201: INTRODUCTION TO MICROBIOLOGY**

**DATE: AUGUST 2012**

**TIME: 2 HOURS**

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**INSTRUCTIONS:** Answer section A and any other *two* questions in section B

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#### SECTION A

##### QUESTION ONE (30 MARKS)

- a) Briefly describe the contributions of Louis Pasteur to microbiology. (3 Marks)
- b) List down five basic groups of microbes. (3 Marks)
- c) Give three differences between archae and Bacteria. (3 Marks)

##### QUESTION TWO

- a) Outline Koch's postulates (basic logic proof that disease is caused by a microbe). (4 Marks)
- b) Define the terms below as used in microbial growth. Use diagrams to enhance the explanation.
  - i. Binary fission. (1 Mark)
  - ii. Exponential increase. (1 Mark)
  - iii. Spontaneous generation. (1 Mark)
- c) Discuss living and non – living characteristics of viruses. (3 Marks)

##### QUESTION THREE

- d) Differentiate between facilitated diffusion and active transport. (4 Marks)
- e) Using diagrams, explain four types of flagellar arrangements in bacteria. (2 Marks)
- f) Differentiate between plasmids and transposons. (2 Marks)
- g) Give two functions of bacteria pili. (2 Marks)

**SECTION B**

**QUESTION FOUR (20 MARKS)**

Differentiate between prokaryotic and eukaryotic cells. (20 Marks)

**QUESTION FIVE (20 MARKS)**

Describe physical and chemical methods of microbial control. (20 Marks)

**QUESTION SIX (20 MARKS)**

Discuss the applications of bacteria to enhance the quality of life. (20 Marks)