

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

THIRD YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN HORTCULTURE, BACHELOR OF SCIENCE IN AGRICULTURE, BACHELOR OF SCIENCE IN AGRICULTURAL EXTENSION AND EDUCATION

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY, BACHELOR OF SCIENCE IN HUMAN NUTRITION AND DIETETICS, BACHELOR OF SCIENCE IN FOOD SCIENCE AND MANAGEMENT.

**SBA 3350/3250: GENERAL MICROBIOLOGY**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Distinguish between the three main viral symmetries (6 marks)
2. (i) Explain the endosymbiosis theory. (3 marks)

(ii) Illustrate four types of bacteria based on position of flagella. (4 marks)

1. Outline the contribution of the following to microbiology
2. Anton-van-leewenhook (2 marks)
3. Louis-pasteur (2 marks)
4. Work out the following given that a certain bacteria was found to have the following. The initial inocculum (n) was 10 cells (CFU) and after 25 minutes there were 320 cells (CFU)
5. Generation time (GT) (1 mark)
6. CFU (N) after 1 hour (2 marks)
7. CFU (N) after 24 hours(Adu) (2 marks)
8. Distinguish using illustrations between budding and binary fission. (4 marks)
9. Explain dimorphism using an illustration and a relevant example. (4 marks)

**QUESTION TWO (20 MARKS)**

Discuss the use of morphology in the identification of bacteria (20 marks)

**QUESTION THREE (20 MARKS)**

Discuss the options available for control of microbes (20 marks)

**QUESTION FOUR (20 MARKS)**

Discuss micro-organisms as friends and as foes to humans (economic importance of micro-organisms) (20 marks)

**QUESTION FIVE (20 MARKS)**

Discuss the method available for estimating microbial growth. (quantification of microbes) (20 marks)