

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

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

**SBT 2409: APPLIED MICROBIOLOGY**

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

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

**QUESTION ONE (30 MARKS)**

1. Describe the following processes (9 marks)
2. Batch fermentation
3. Fed-batch fermentation
4. Describe the down stream processing of fermentation (3 marks)
5. Explain giving examples the use of microbes in the food and beverage industry (4 marks)
6. Explain three benefits of plant-microbe interations in agriculture (6 marks)
7. Outline the categories of human therapeutic biomolecules produced through recombinant DNA technology (6 marks)
8. Describe the types of mycorrhizae (2 marks)

**QUESTION TWO (20 MARKS)**

Discuss the steps in cheese production. (20 marks)

**QUESTION THREE (20 MARKS)**

Discuss the process of biological nitrogen fixation. (20 marks)

**QUESTION FOUR (20 MARKS)**

Discuss the benefits of microbial recombinant DNA technology in agriculture. (20 marks)