

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2014/2015**

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY AND BACHELOR OF SCIENCE IN FOOD SCIENCE AND NUTRITION

**AFS 2304: FOOD AND INDUSTRIAL MICROBIOLOGY**

**DATE: OCTOBER 2015 TIME: 2 HOURS**

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

**QUESTION ONE (30 MARKS)**

1. State five primary sources of micro-organisms in food. (5 Marks)
2. Discuss four methods of preserving pure monoculture. (8 Marks)
3. Explain role of lactase enzymes in industrial food processing. (4 Marks)
4. State criteria for choosing an inoculum. (5 Marks)
5. Briefly explain meaning of the following terms:
6. Secondary metabolites. (2 Marks)
7. Biotechnology. (2 Marks)
8. Producer micro-organism. (2 Marks)
9. Idiophase (2 Marks)

**QUESTION TWO (20 MARKS)**

Giving examples, discuss application of bacteria in industrial processes. (20 Marks)

**QUESTION THREE (20 MARKS)**

Instability is one of the major reasons that can lead to rejection of a culture act at industrial scale. Explain factors that influence stability and performance during fermentation. (20 Marks)

**QUESTION FOUR (20 MARKS)**

1. Briefly discuss five consequences of contamination and instability of inoculum. (10 Marks)
2. Discuss five human applications of biotechnology. (10 Marks)