**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2015/2016 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN MICROBIOLOGY**

**COURSE CODE: MIC 312**

**COURSE TITLE: FOOD AND DAIRY MICROBIOLOGY**

**DATE: 3/12/2015**

**TIME: 9.00 A.M-12.00 NOON**

**INSTRUCTIONS TO CANDIDATES:**

Answer **ALL** questions in **section A** and any other **THREE** questions in **section B**.

Illustrate your answers with suitable diagrams where necessary.

**SECTION A; (28 MARKS)**

**Answer all questions.**

1. Explain 3 ways in which microorganisms are used in the food industry. (6 marks)

2. Distinguish fermentation from food spoilage and list any 3 causes of food spoilage. (4 marks)

3. Distinguish between food poisoning and food intoxication. (2 marks)

4. Describe surface sampling as used in microbial testing procedure and give at least three types of surface sampling methods. (5 marks)

5. State and explain any 3 intrinsic factors that affect growth of microorganisms in food. (6 marks)

6. a. Define water activity. (1 mark)

 b. Describe what happens to bacteria in food when water activity is changed from 0.998 to 0.945. (2 marks)

7. Explain the meaning of Hazard Analysis Critical Control Point (HACCP). (2 marks)

**SECTION B; (42 MARKS)**

**Answer Any 3 Questions**

8. Discuss the various methods used in food preservation. (14 marks)

9. Discuss microbiological risk assessment in food industry. (14 marks)

10. Using specific examples, discuss the role of parasites and viruses in food borne illnesses. (14 marks)

11. Discuss *Bacillus* *cereus* and *Staphylococcus* *aureus* food intoxication, stating the types of toxins mode of transmission, diagnosis and prevention methods. (14 marks)