



# TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE AND APPLIED SCIENCE

## UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN FOOD TECHNOLOGY AND QUALITY ASSURANCE

AFS 4204: Food Microbiology.

## END OF SEMESTER EXAMINATION

**SERIES:** APRIL/2016

**TIME:** 2 HOURS

**DATE:** MAY/2016

### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **five** questions. Attempt Question One and any other TWO.

**Do not write on the question paper.**

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### Question ONE

- a) Briefly explain the roles of microorganisms in foods. (6mks)
- b) Describe the following groups of foods in relation to water activity, giving two example of spoilage organism involved in each case.
  - i) High moisture foods ( $a_w$  0.99 - 0.95) (2mks)
  - ii) Intermediate moisture foods ( $a_w$  0.95 - 0.61) (2mks)
- c) Explain the influence of pH on food preservation (4mks)
- d) Describe the characteristics of exotoxins and endotoxins produced by disease causing microorganisms. (6mks)
- e) Explain how nutrient content influence the spoilage of meat. (5mks)

F) Define the term preservative, giving three examples of organic acid used as preservatives in food processing. (5mks)

### **Question TWO**

- a) State and explain any five factors that affect the activity of sanitizers. (10mks)
- b) Describe five groups of microorganisms that can grow and spoil foods with low water activity. (10mks)

### **Question THREE**

- a) State and explain any five factors that affect the activity of sanitizers. (10mks)
- b) Describe five groups of microorganisms that can grow and spoil foods with low water activity. (10mks)

### **Question FOUR**

Discuss mycotoxins produced by various groups of fungi together with the specific disease caused by each and their prevention. (20mks)

### **Question FIVE**

Describe food poisoning by the following organisms; stating two symptoms in each case.

- a) *Salmonella typhi* and *paratyphi* (5mks)
- b) *Listeria monocytogenes* (5mks)
- c) *Staphylococcus aureus* (5mks)
- d) *Clostridium perfringens* (5mks)