



# TECHNICAL UNIVERSITY OF MOMBASA

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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) Describe food as a substrate for microorganisms. (5mks)
- b) With an illustration, describe Cardinal temperatures for growth of microorganisms in foods. (5mks)
- c) Explain the effect of water activity ( $a_w$ ) on food stability (4mks)
- d) Describe leaker spoilage of canned foods. (4mks)
- e) Explain D values in relation to heat resistance of microorganisms. (4mks)
- f) Differentiate between food infection and food intoxication. (4mks)
- g) Describe paralytic shellfish poisoning of fish. (4mks)

### Question TWO

- a) Discuss the importance of microorganisms in foods. (12mks)

b) Explain the application of appertization and pasteurisation heat preservation methods in food Processing.  
(8mks)

### **Question THREE**

a) State and explain five factors that affect the heat resistance of microorganisms. (10mks)

b) Explain five factors that affect individuals' response to food poisoning microorganisms and their toxins.  
(10mks)

### **Question FOUR**

Discuss the effect of the following factors on growth of microorganisms in foods

a) Temperature (10mks)

b) Water activity (10mks)

### **Question FIVE**

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

a) *Yersinia enterocolytica* (5mks)

b) *Vibrio parahaemolyticus* (5mks)

c) *Bacillus cereus* (5mks)

d) *Clostridium botulinum* (5mks)