



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.

Question ONE

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

Question TWO

- 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)