



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

**BACHELOR OF SCIENCE IN FOOD TECHNOLOGY AND
QUALITY ASSURANCE**

AFS 4203: FOOD PLANT HYGIENE AND ENVIRONMENTAL MANAGEMENT

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2HOURS

DATE: 14 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 (Compulsory) and any other
TWO questions.

Do not write on the question paper.

Question 1

- (a) (i) Outline Two important hygiene requirements during food plant site selection
(2marks)
- (ii) Outline Four factors to consider in the construction of food plant walls and
ceilings (4marks)
- (b) (i) List TWO disadvantages of stainless steel as a material used for constructing
contact surfaces for food processing equipment (2marks)
- (ii) List TWO advantages of glass as a material used for constructing contact surfaces
for food processing equipment (2marks)

- (c) (i) Describe the standard methods for cleansing food plant and equipment (2marks)
- (ii) Explain the Two methods of disinfecting food plants (4marks)

- (d) (i) Outline 5 considerations for pest control in a food plant (5marks)
- (ii) Outline 3 hygiene requirements for personnel working in a food plant (3marks)

- (e) (i) Outline 3 standard requirements for water used in the food processing industry (3marks)
- (ii) Outline 3 factors that influence the choice of water treatment methods (3marks)

Question TWO

Discuss the following methods of treatment of wastes from food plants

- (a) Biological treatment (10marks)
- (b) Physical treatment (10marks)

Question THREE

- (a) Explain dismantling and cleaning of food plants (8marks)
- (b) Discuss the factors to consider during food plant construction and installation of equipment (12marks)

Question FOUR

- (a) Discuss the following chemicals used for disinfecting food plants:
 - (i) Chlorine compounds (5marks)
 - (ii) Quaternary ammonium compounds (QATs) (5marks)

- (b) Using appropriate equations, explain water softening by precipitation (10marks)

Question FIVE

(a) Discuss the following classes of detergents used in food plant cleaning:

(i) Inorganic alkaline detergents (5marks)

(ii) Detergents composed of surface active agents (5marks)

(b) Discuss chlorination method of water treatment in food plants (10marks)