



TECHNICAL UNIVERSITY OF MOMBASA

School of Applied and Health Sciences
DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:
DIPLOMA IN FOOD TECHNOLOGY AND QUALITY ASSURANCE
AFS 2101: FOOD MICROBIOLOGY I
END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2024 SERIES

TIME: 2 HOURS

DATE: DECEMBER 2024

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 ONE

- a. Explain the influence of the following in regard to food deterioration;
 - i. Microorganisms (2 Marks)
 - ii. Enzymes (2 Marks)
- b. Differentiate between food infection and food intoxication, giving example of bacteria involved in each case (6 Marks)
- c. Describe the following changes in foods due to growth of microorganisms
 - i. Colour (2 Marks)
 - ii. Texture (2 Marks)

- d. State five factors to consider when selecting a chemical to use for control of microorganisms (5 Marks)
- e. State any five reasons why molds are an important group of microflora of fruit products (5 Marks)
- f. Differentiate between endotoxins and exotoxins. (6 Marks)

Question TWO

- a. Discuss three changes in foods caused by spoilage microorganisms. (9 Marks)
- b. Explain any three factors affecting the heat resistance of an organism. (6 Marks)

Question THREE

- a. State and explain any four factors that affect the activity of sanitizers during cleaning in the food industry. (8 Marks)
- a. Discuss the spoilage of canned foods by theomorphic bacteria (7 Marks)

Question FOUR

- a. Discuss the role of microorganisms in food industry. (9 Marks)
- b. Discuss the effect of following factors on the growth of microorganisms.
 - i. Water activity (3 Marks)
 - ii. Temperature (3 Marks)

Question FIVE

For the following organisms, describe the features of the food poisoning i.e the disease, symptoms and prevention.

- a. *Clostridium botulinum* (3 Marks)
- b. *Shigella* (3 Marks)
- c. *Brucella* (3 Marks)
- d. *Vibrio parahaemolytica* (3 Marks)