



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

SPECIAL/SUPPLEMENTARY 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. Describe Sulfur stinker spoilage that occur in canned foods. (4 Marks)
- b. Explain the effect of water activity on microbial growth. (4Marks)
- c. State and explain any three actions of bacteria involved in food spoilage. (6 Marks)
- d. State four positive contributions of probiotic lactic acid bacteria in the gut. (4 Marks)
- e. Explain any three factors that make meat an ideal growth medium for spoilage organisms. (6 Marks)
- f. State any four factors that affect the activity of sanitizers during cleaning in the food industry (4 marks)
- g. Describe the features of food poisoning by *Aspergillus flavus*. (2 Marks)

Question TWO

- a. Discuss five factors that affect an individual's response to a particular food poisoning organism and their toxins. (10Marks)
- b. Describe paralytic shellfish poisoning. (5 Marks)

Question THREE

- a. Describe the changes that occur during spoilage of meat under aerobic condition (10 Marks)
- b. State any five criteria considered when selecting a chemical used for control of microorganisms (5 Marks)

Question FOUR

Discuss temperature as a main factor used in the control of microorganisms under the following;

- a. Freezing (3 Marks)
- b. Pasteurization (3 Marks)
- c. Tyndallization (3 Marks)
- d. Autoclaving (3 Marks)
- e. Incineration (3 Marks)

Question FIVE

- a. Discuss the importance of pathogenic organisms in the food industry (9 Marks)
- b. For the following organisms, describe the features of the food poisoning i.e the disease, symptoms and prevention.
 - i. *Salmonella typhi* (3 Marks)
 - ii. *Yersinia enterocolitica* (3 Marks)