



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF HEALTH SCIENCES

THIRD YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (PUBLIC HEALTH)

HPH 302: FOOD SAFETY AND SANITATION

DATE:

TIME:

INSTRUCTIONS:

This paper consists of two sections A and B

SECTION A

Specific Instructions

- **This section has one question**
- **The question is compulsory**
- **The question is 30 marks**

QUESTION ONE (30 MARKS)

- a) Explain the benefits of a food sanitation program. (3 marks)
- b) Outline factors that influence toxicity in an individual following chemical exposure. (3 marks)
- c) State common anti-nutrients found in plant foods. (3 marks)
- d) Outline biochemical changes in food due to food spoilage. (3 marks)
- e) Explain why it is important to investigate disease outbreaks (3 marks)
- f) Highlight factors to consider in the selection of a food analysis technique. (3 marks)

- g) A butcher supplied chicken to restaurant X in Kenya. A large number of people who consumed chicken from the restaurant were hospitalized with salmonella contamination. Explain the responsibilities of state authorities in addressing this food poisoning incident. (3 marks)
- h) State the importance of health education in the food industry. (3 marks)
- i) Outline the provisions in the Kenya food laws that relate to;-
- (i). Animal welfare
 - (ii) Protection of food
 - (iii) Environment protection (3 marks)
- j) State the factors to consider in determining a food plant location (3 marks)

SECTION B:

Specific Instructions

- **This section has four (4) questions**
- **Answer any two (2) questions**
- **Each question is 20 marks**

QUESTION TWO (20 marks)

- a) As a training manager you have been invited to teach staff of company X on intrinsic factors that contribute to food spoilage. Describe the content of your presentation. (10 marks)
- b) A child consumed watermelon in a restaurant and was thereafter found to be infected with *Campylobacter jejuni* following a severe bout of diarrhea and abdominal cramps. Investigations revealed that the knife used to slice the melon had also been used to cut raw chicken. Describe what could have been done to prevent the occurrence. (10 marks)

QUESTION THREE (20 MARKS)

- a) Company Y has requested you to determine the anti-nutrients present in raw materials for cereal based flour meant for young children feeding. Describe the techniques the company would utilize in the elimination/reduction of the same. (10 marks)

- b) Explain the benefits that Kenya would accrue from ascribing to international food standards. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Describe the various sources of food contaminants. (10 marks)
- b) You are stationed in a health facility where children within the locality are presenting with symptoms of abdominal pain, diarrhea and fever. You suspect *Clostridium perfringens* enteritis outbreak. Describe the steps you would take to confirm the outbreak. (10 marks)

QUESTION FIVE (20 MARKS)

- a) Food analysis is critical for public health. Discuss (10 marks)
- b) You are the quality assurance manager of a dairy processing company, lately you have received many complaints on your products. Based on this you decide to implement HACCP. Discuss the challenges you are likely to face. (10 marks)