



# MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (PUBLIC HEALTH)

HPH 207: FOOD SCIENCE AND TECHNOLOGY

DATE: 13/8/2021

TIME: 2:00 – 4:00 PM

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## INSTRUCTIONS:

### SECTION A

#### Specific Instructions

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

#### QUESTION ONE (30 MARKS)

- Explain the effects of heat processing on vitamins. (3 marks)
- Millet flour porridge is part of menu for restaurant Y. The production of millet flour involves several steps. Explain how these processing steps affect the quality of millet flour. (3 marks)
- Explain the influence of food texture on food acceptability. (3 marks)
- John is having lunch at his workplace, his colleagues express concern that the apple in his lunch box is unusually big and may have been produced by genetically engineering modification methods and maybe harmful to their health. Explain. (3 marks)
- Outline the classification of carbohydrates based on molecule size. (3 marks)
- State the legislation on food additives. (3 marks)
- Explain the interaction between food products and packaging materials. (3 marks)

- h) Outline the classification of food storage structures based on principle of operation. (3 marks)
- i) Peter likes to eat his bread while toasted. Explain the chemical reaction that takes place and the importance of the reaction to the food industry. (3 marks)
- j) Outline the contribution of Cartagena protocols to food biosafety. (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) Salting is a technique commonly used in food preservation. As a Public health expert discuss some concerns that the public may have on safety of consumption of food preserved by use of salt. (10 marks)
- b) Discuss the application of food biotechnology in the food industry. (10 marks)

### **QUESTION THREE (20 MARKS)**

- a) Explain the importance of food science in national development. (10 marks)
- b) You are involved in a sensory properties evaluation exercise of newly developed breakfast cereal bars of company Z, you observe that they all taste different. Explain the factors that are responsible for these. (10 marks)

### **QUESTION FOUR (20 MARKS)**

- a) A researcher from Machakos University wants to share research information with a colleague at Cambridge University with regard to food data. Explain the various food classifications systems that he would use in preparing his data to ensure consistency and understanding of his data. (10 marks)
- b) A new silver fish and sorghum flour porridge for children has recently been developed and added to company Xs range of flours. The marketing team has proposed different marketing strategies including use of attractive packaging material. Giving reasons, describe the various types of food packaging that the company may utilize in packaging the flour. (10 marks)

**QUESTION FIVE (20 MARKS)**

- a) As a manager of food company Y, describe the food additives that you would use in development of your food products. (10 marks)
- b) Discuss the factors that you would consider in utilization of traditional crib as a food Storage structures. (10 marks)