



MACHAKOS UNIVERSITY

University Examinations 2019/2020 Academic year

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN PUBLIC HEALTH.

HPH 217: FOOD SCIENCE AND TECHNOLOGY I

DATE: 23/11/2020

TIME: 2:00 – 4:00 PM

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 (COMPULSORY) (30 MARKS)

- Explain the role of food science to national development. (3 marks)
- State the factors that influence taste attributes in food. (3 marks)
- Using examples, highlight the main classification of food hazards. (3 marks)
- State the importance of food laws in the food industry. (3 marks)
- Using relevant examples explain the effects of food processing on the following:-
 - Fruits and vegetables
 - Fish
 - Eggs (3 marks)
- Explain legislation on food additives. (3 marks)
- Highlight the factors to consider in the design of food storage facilities. (3 marks)
- Using examples explain the various types of food packaging materials. (3 marks)
- Explain three (3) functional properties of food proteins. (3 marks)
- Outline the importance of food preservation. (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 Wedding party is held in your neighborhood, after which there are leftover foods. The organizers seek your help in storing the food to avoid spoilage.

- a) Explain food storage techniques that you would utilize to store the food. (10 marks)
- b) Describe risk factors for development of food borne diseases from the leftover food. (10 marks)

QUESTION THREE (20 MARKS)

- a) You are provided with an apple as a snack in a conference. You notice that the apple discolors upon cutting. Explain the biochemical reactions that lead to the browning of the apple. (10 marks)
- b) Using relevant examples explain food preservation principles. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Company X that is involved in production of various baked food products has hired you as their production manager. Your day to day activities involve preparation of food products using sugar. Based on these discuss the role of sugars in:
- i Baking of cakes (5 marks)
- ii Surface cracking in cookies (5 marks)
- b) Explain methods used to control contamination in the food industry. (10 marks)

QUESTION FIVE (20 MARKS)

- a) You are provided with three brands of milk; Kinangop, Fresha and KCC. Identify and explain food quality classes that you would use to evaluate the quality of milk from the different brands. (10 marks)
- b) Discuss the application of enzymes in biotechnology. (10 marks)