



W1-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS 2017/2018
JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
SECOND YEAR FIRST SEMESTER SUPPLEMENTARY EXAMINATION FOR THE
BACHELOR OF SCIENCE IN COMMUNITY HEALTH AND DEVELOPMENT

ICH 2208: FOOD SCIENCE AND TECHNOLOGY

DATE: OCTOBER 2018

TIME: 2 HOURS

INSTRUCTIONS: Answer ALL questions in section A and only ONE in section B

SECTION A: [48 MARKS]

Answer all the questions in this section

- 1) Define the following terms as applied in Food Science and Technology:
- Insulin index
 - Food additives
 - Pasteurization
 - Food adulteration
- (6 marks)
- 2) Outline functional properties of carbohydrates in food
- (4 marks)
- 3) Fat substitutes are used to reduce the amount of fat in the diet. The substitutes are based on different materials which can be grouped into three. With examples, describe the three groups of fat substitutes.
- (6 marks)
- 4) Briefly outline at least six categories of lipids.
- (6 marks)
- 5) Identify and briefly explain four chemical methods of food preservation.
- (8 marks)
- 6) Cereal grains are important in human health as they provide nutrients that perform various functions in the body. Outline the nutrients provided by the cereal grains and their respective functions in the body
- (6 marks)

Thiamin - Prevents beriberi
Niacin - Prevents pellagra
Biotin - Prevents dermatitis
Vitamin E - Prevents skin diseases

A C A D E

7) Explain the reasons for the adoption of sugar substitutes in food processing. (6 marks)

8) Identify and explain any three methods of food concentration. (6 marks)

SECTION B [22 MARKS]

Answer any one question in this section

9) Food processing is aimed at preserving food quality

a. Discuss the factors causing food spoilage (12 marks)

b. Discuss the dehydration methods of foods. (10 marks)

10) Lipids have been described as necessary evil in our diets.

a. Outline the biological functions of lipids in our bodies (10 marks)

b. Outline the various effects of excessive lipids intake on human health

(4 marks)

c. List three types of sugar replacers

(3 marks)

d. Describe the functional properties of lipids

(5 marks)

11) Microorganisms are of great importance in food science and technology. For this reason a lot of efforts have been put in to address them. With this in mind:

a. Discuss the various sources of microorganisms in foods. (12 marks)

b. Explain factors affecting the growth of microorganisms. (10 marks)

Salinity
Water temperature
Temp
PH
Radiation

Handwritten notes:
- Sources of microorganisms: air, water, soil, food, contact with surfaces, etc.
- Factors affecting growth: temperature, pH, salinity, radiation, etc.