

Name: _____ Index No. _____

1507/112 1819/102

1802/102 1907/102

FOOD SCIENCE AND NUTRITION

Oct./ Nov. 2015

Time: 3 Hours

Candidate's Signature: _____

Date: _____



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CRAFT CERTIFICATE IN CATERING AND ACCOMMODATION
CRAFT CERTIFICATE IN FOOD AND BEVERAGE PRODUCTION AND
SERVICE**

CRAFT CERTIFICATE IN BAKING TECHNOLOGY

MODULE I

FOOD SCIENCE AND NUTRITION

3 Hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided above.

Sign and write the date of the examination in the spaces provided above.

This paper consists of TWO sections; A and B.

Answer ALL the questions in section A and any THREE questions from section B in the spaces provided in this question paper.

Do NOT remove any page(s) from this question paper.

Candidates should answer the questions in English.

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1 - 15	55	
B		15	
		15	
		15	
TOTAL SCORE		100	

This paper consists 16 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A (55 marks)

Answer **ALL** the questions in this section on the spaces provided after each question.

1. Food provides the human body with materials for certain purposes. Outline **four** of such purposes. (4 marks)

2. Explain the meaning of each of the following terms as used in food science:

(a) overnutrition; (2 marks)

(b) endemic goitre. (2 marks)

3. Differentiate a base from an alkali. (4 marks)

4. (a) Explain the meaning of the symbol 'pH' as used in food processing. (2 marks)

(b) Describe the 'pH' system. (2 marks)

5. Identify **six** types of saturated hydrocarbons. (3 marks)

6. List **two** carbohydrates important in human nutrition under each of the following groups:

(a) monosaccharides; (1 mark)

(b) disaccharides; (1 mark)

(c) polysaccharides. (1 mark)

7. Identify **eight** dietary sources of fat which originates from animals. (4 marks)

8. State **five** guidelines which should be followed when purchasing green vegetables. (5 marks)

9. (a) Describe the human alimentary canal. (2 marks)

(b) Identify **six** parts of the human alimentary canal. (3 marks)

10. State **three** profitable uses of enzymes in food processing. (3 marks)

11. With the aid of **three** examples, explain the use of stabilizers and thickeners in food processing. (3½ marks)

12. (a) Explain the meaning of the term food contaminant as used in the food industry. (2 marks)

- (b) Identify **three** critical points of food contamination in a food production control cycle. (1½ marks)

13. Outline **three** ways in which food can be rendered unfit for human consumption. (3 marks)

14. By using diagrams, illustrate the osmotic effect of a salt solution on a bacterial cell. (3 marks)

15. Outline **three** measures that an individual may take for the prevention of HIV and AIDS. (3 marks)

SECTION B (45 marks)

Answer any **THREE** questions from this section in the spaces provided after question 20.

16. (a) Explain the meaning of each of the following terms as used in the food industry:
- (i) food science; (2 marks)
 - (ii) nutrients. (2 marks)
- (b) Describe the **two** ways by which the 'pH' of a food solution can be determined. (4 marks)
- (c) Write a structural formula for each of the following hydrocarbons:
- (i) ethane C_2H_6 ; (3 marks)
 - (ii) propane C_3H_8 . (4 marks)
17. (a) List the **eight** essential amino-acids necessary for an adult person. (4 marks)
- (b) Identify **four** dietary sources of each of the following vitamins:
- (i) thiamine (B_1); (2 marks)
 - (ii) riboflavin (B_2); (2 marks)
 - (iii) nicotinic acid. (2 marks)
- (c) State **five** signs and symptoms of HIV and AIDS. (5 marks)
18. (a) Outline **four** properties of each of the following chemical substances:
- (i) salts; (4 marks)
 - (ii) bases. (4 marks)
- (b) Identify **six** types of sugar which may be available to a baker. (3 marks)
- (c) State **four** measures which should be taken to control houseflies in a food workshop. (4 marks)
19. (a) Explain the meaning of each of the following terms as used in food science and nutrition:
- (i) food poisoning; (2 marks)
 - (ii) rancidity; (2 marks)

- (iii) specificity (in relation to enzymes). (2 marks)
 - (b) State **four** measures which should be taken to control chemical food poisoning in a food workshop. (4 marks)
 - (c) Outline **five** characteristics of yeast cells. (5 marks)
20. (a) State **seven** advantages of using additives in food processing. (7 marks)
- (b) Explain the meaning of each of the following terms associated with food digestion:
- (i) mastication; (2 marks)
 - (ii) peristalsis. (2 marks)
- (c) Explain the **two** ways of achieving low-temperature food preservation. (4 marks)
