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FOOD SCIENCE AND NUTRITION

June/July 2015

Time: 3 hours

Candidate's Signature: _____

Date: _____



THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN FOOD AND BEVERAGE
PRODUCTION AND SERVICE

CRAFT CERTIFICATE IN CATERING AND ACCOMMODATION
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**. Section **A** and **B** have **15** and **5** questions respectively. Answer **ALL** questions in Section **A** and any **THREE** questions from Section **B** in the spaces provided after question 20.*

Maximum marks for each part of a question are indicated.

*Do **NOT** remove any pages from this booklet.*

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 of 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 in the spaces provided after each question.

1. (a) Explain the meaning of the term nutrients as used in food science and nutrition. (2 marks)

Substances that are essential for the growth and maintenance of the body.

- (b) State **two** ways through which HIV/AIDS may be spread. (2 marks)

Sharing needles and syringes
Sexual intercourse with an infected partner

2. Differentiate malnutrition from undernutrition. (4 marks)

Undernutrition - A condition which results in loss of body weight
Malnutrition - A condition which results in loss of body weight and other nutrients

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

Alkali is a base that is soluble in water.
Base is a substance that can neutralise an acid.



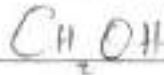
4. (a) By using its key features and properties, describe saturated hydrocarbons. (2 marks)

They are hydrocarbons with single bonds between carbon atoms.

- (b) List **four** examples of saturated hydrocarbons. (2 marks)

Methane - CH_4
Ethane - C_2H_6
Propane - C_3H_8
Butane - C_4H_{10}

5. (a) Write down the general molecular formula of monosaccharide sugars. (2 marks)



- (b) State the **three** most important monosaccharide sugars in human nutrition. (3 marks)

Galactose

Fructose

Celulose

6. (a) Explain the meaning of the term 'Biological Value' (BV) in relation to proteins. (2 marks)

- (b) The use of additives in food may be undesirable. State **three** reasons to support this. (3 marks)

change

7. Explain the meaning of the following terms:

- (i) autolysis;

is the destruction of plant and animal cells by their own enzymes.

- (ii) microbial spoilage.

Spoilage of food by micro-organisms.

8. (a) Explain how biological food poisoning occurs. (2 marks)



- (b) List **two** groups of chemical used to control the growth of micro-organisms in a food workshop. (2 marks)

Antibiotics
Preservatives

9. (a) Explain the meaning of the term 'enzyme'. (2 marks)

substances which control all chemical substances produced in living organisms
Enzymes are chemical in nature which speed up the rate of metabolism and rate of reaction.

- (b) List **two** digestive enzymes contained in the pancreatic juice. (1 mark)

Pepsin
Lipase

10. Classify fruits according to their culinary purpose. (3 marks)

11. State **three** uses of almonds in food processing. (3 marks)

12. Explain the meaning of the term mechanical food digestion. (2 marks)

13. (a) Explain the meaning of the term food contamination. (2 marks)



(b) List two causes of food contaminants.

easyvet.com (2 marks)

14. State four principles applied in food preservation.

(4 marks)

Moisture reduction

Salting

Use of chemicals

Temp reduction



15. (a) Describe CD4 - cells in relation to HIV/AIDS.

(2 marks)

(b) Explain the meaning of the acronym ART as used in HIV and AIDS management.

(1 mark)

ART - It means Antiretroviral Therapy.

SECTION B (45 marks)

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

16. (a) Outline **four** desirable roles of enzymes in food processing. (4 marks)
- Bread making
- Production of alcohol
- Tea production
- Meat tenderizing
- (b) State **five** benefits derived from the use of additives in food. (5 marks)
- (c) State **six** uses of butter in food processing. (6 marks)
17. (a) Classify proteins according to:
 (i) chemical composition;
 (ii) function. *- Growth*
- Maintenance of body (3 marks)
- (b) List **eight** rich sources of protein in the human diet. (4 marks)
- (c) State **five** measures taken to prevent infestation of food workshops by rats and mice. (5 marks)
18. (a) State **eight** personal hygiene rules that should be observed by food workshop personnel. (8 marks)
- (b) Explain the meaning of the following terms used in reference to food digestion:
 (i) chyme; (2 marks)
 (ii) bolus. *Food which is mixed by the tongue together with the secretions of the salivary glands.* (2 marks)
- (c) List **six** acids found in foods. *Lactic acid* (3 marks)
19. (a) By using illustrative diagrams, describe the reproductive process of a yeast cell. (5 marks)
- (b) State **five** details shown on a food package. (5 marks)
- (c) (i) Explain the meaning of the term 'game' as used in connection with food commodities. (2 marks)
 (ii) List **six** types of feathered game. (3 marks)
20. (a) State **five** properties of alkalis. (5 marks)
- (b) State **five** control measures taken to reduce the risk of salmonella poisoning. (5 marks)
- Good hygiene
- Ensure place is free vermin etc
- (c) Outline **five** precautions taken to ensure that production procedures do not contribute to contamination of food. (5 marks)

