

2819/102

FOOD AND BEVERAGE PRODUCTION,  
NUTRITION AND MATHEMATICS

March/April 2023

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN CATERING AND ACCOMMODATION MANAGEMENT

MODULE I

FOOD AND BEVERAGE PRODUCTION, NUTRITION AND MATHEMATICS

3 hours

#### INSTRUCTIONS TO CANDIDATES

*You should have the following for this examination:*

*Non-programmable silent electronic calculator;*

*KNEC mathematical tables.*

*This paper consists of **THREE** sections; A, B and C.*

*Answer **ALL** questions in sections A and B*

*Answer **QUESTION 21 (COMPULSORY)** and any other **TWO** questions from section C.*

*Answers to the questions **should** be written in the answer booklet provided.*

*Maximum marks for each part of a question are as indicated.*

*Candidates should answer the questions in English.*

**This paper consists of 4 printed pages.**

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

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Turn over

**SECTION A: MATHEMATICS (30 marks)**

*Answer ALL questions in this section.*

1. Given that  $a = -2$  and  $b = -5$ , evaluate:  $4a - 6b + 4a - 14b$ . (3 marks)
2. If Peter spends Ksh 400 a day, his salary lasts for 48 days. Determine the number of days the same amount of money would last, if his expenditure is increased by Ksh 200 per day. (3 marks)
3. Determine the amount of milk a container in the form of a cuboid measuring 8 m by 10 m by 13 m would hold. (3 marks)
4. Determine the equation of a straight line passing through the points A (-1, 2) and B(-4, 6). (3 marks)
5. A three digits number is formed randomly from the digits 1, 3 and 8 without any of them occurring more than once.
  - (i) Write all the possible numbers formed from this arrangement. (2 marks)
  - (ii) What is the probability that the number formed is an odd number. (1 mark)
6. Table I shows the number of goals scored by a hockey team in a series of matches.

**Table I**

Goals scored	1	2	3	4	5
Number of matches	8	5	4	2	1

Determine the:

- (i) total number of matches played; (1 mark)
  - (ii) mean number of goals scored. (2 marks)
7. An American tourist exchanged 10,000 dollars to Kenya shillings. He spend Ksh 640,000 and converted the remaining to UK pounds (£) when leaving the country. The exchange rate at the bank was as shown in table II.

**Table II**

	Buying	Selling
Dollar	118.00	120.00
UK pound (£)	122.00	125.00

Determine how much UK pound (£) he received. (3 marks)

8. The following set of scores are obtained by first year students in a catering premise examination.

15, 37, 42, 19, 14, 27, 42, 37, 27, 7, 33, 30, 12, 6, 31, 24, 25, 50, 29, 38, 35

Develop:

- (i) A grouped frequency distribution table with classes; 1 - 10, 11 - 20, 21 - 30, 31 - 40 and 41 - 50. (2 marks)
- (ii) State the modal class. (1 mark)
9. Given the ratio  $X : Y = 3 : 5$  and  $X : Z$  is  $4 : 7$ , determine the ratio of  $X : Y : Z$ . (3 marks)
10. Define each of the following terms as used in statistics:
- (i) sampling; (1 mark)
- (ii) census. (1 mark)
- (b) State **two** advantages of sampling over census surveying. (1 mark)

**SECTION B: FOOD AND BEVERAGE NUTRITION (30 marks)**

*Answer ALL the questions in this section.*

11. State **three** functions of fats in the body. (3 marks)
12. Identify **three** benefits of high fibre diets. (3 marks)
13. Identify **three** organic nutrients. (3 marks)
14. Explain the meaning of each of the following terms:
- (i) food allergy; (1 mark)
- (ii) basal metabolism; (1 mark)
- (iii) digestion. (1 mark)
15. State **three** fat soluble vitamins. (3 marks)
16. Highlight **three** signs and symptoms of marasmus. (3 marks)
17. Identify **three** nutrients found in fish. (3 marks)
18. State **three** effects of water deficiency in the body. (3 marks)

19. Highlight **three** types of food spoilage. (3 marks)
20. Explain **three** reasons for cooking food. (3 marks)

**SECTION C: FOOD AND BEVERAGE PRODUCTION (40 marks)**

*Answer Question 21 (compulsory) and any other TWO questions from this section.*

21. (a) Highlight **three** reasons why kitchen staff should report five minutes before time. (3 marks)
- (b) State **three** duties and responsibilities of the head chef. (3 marks)
- (c) State **four** guidelines to follow when roasting a beef joint. (4 marks)
22. (a) Identify **two** uses of sugar in cookery. (2 marks)
- (b) Highlight **five** qualities required in a Chef's jacket. (5 marks)
- (c) Differentiate between 'glazing' and 'basting'. (4 marks)
- (d) Explain meaning of each of the following terms:
- (i) veloute; (2 marks)
- (ii) trussing. (2 marks)
23. (a) State **six** ways of controlling food contamination at the preparation stage. (6 marks)
- (b) Giving an example in each case, identify **four** categories of vegetables. (6 marks)
- (c) State **three** points to note when using baking tins in the kitchen. (3 marks)
24. (a) Explain **three** rules to observe when preparing and cooking vegetables to prevent loss of nutrients. (6 marks)
- (b) Discuss **three** reasons for marinating foods. (6 marks)
- (c) State **three** characteristics of an ideal cooking pan. (3 marks)

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