

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

Answer **ALL** the questions in this section.

Show **ALL** the steps in your calculations, giving your answers at each stage.

1. Without using a calculator, evaluate:

$$-6 \times 9 + 7 - 12 \div 3 - 5 \quad (3 \text{ marks})$$

2. Determine the ratio of  $a:c$  given that  $a:b = 3:5$  and  $b:c = 6:5$ . (3 marks)

3. A residential estate is to be developed on a 6 hectares piece of land. 1,500 m<sup>2</sup> are taken up by road and the rest is divided into 40 equal plots. Calculate the area of each plot in m<sup>2</sup>. (3 marks)

4. Use table 1 to draw a graph of  $y = (3x + 1)(2x - 5)$  for  $-1 \leq x \leq 4$ .

Table 1

<b>x</b>	-1	-0.5	0	0.5	1	1.5	2	2.5	3	3.5	4
<b>y</b>	14	6	-5	-10	-12	-11	-7	0	10	23	39

Take 2 cm to represent 1 unit on x - axis and 1 cm to represent 5 units on y - axis.

(3 marks)

5. The probability that Owino will be selected to play for his institute's football team is  $\frac{7}{10}$ . If not selected to play for the football team, the chance of being selected for the hockey team is  $\frac{4}{9}$ . What is the probability that he will not be selected for either of the team. (3 marks)

6. The price of a laundry machine to be imported from Netherlands was quoted as 7,805 Dutch Guilders. Express this in Kenyan shillings given that 1 Dutch Guilder = Ksh 27.0769. Round off the answer to the nearest Kenyan shillings. (3 marks)

7. Table 2 represents masses to the nearest kilogramme of fish supplied in a hotel in a day.

Table 2

<b>Mass (kg)</b>	5 - 9	10 - 14	15 - 19	20 - 24
<b>No. of fish</b>	6	20	8	2

Represent the information on a histogram.

(3 marks)

8. Table 3 shows marks scored by students in a mathematics test.

Table 3

Marks	Frequency
5 - 9	2
10 - 14	13
15 - 19	31
20 - 24	23
25 - 29	14
30 - 34	6
35 - 39	1

- Calculate the mean score. (3 marks)
9. Calculate the variance of the following set of scores 2, 6, 4, 3, 2 and 1. (3 marks)
10. With relevant examples, explain the meaning of discrete data. (3 marks)

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

*Answer ALL the questions in this section in the spaces provided.*

11. State **three** properties of sugars. (3 marks)
12. Identify **three** types of animal fats used in cooking. (3 marks)
13. Describe the chemical composition of proteins. (3 marks)
14. State **one** function of each of the following in the body:
- (a) thiamin; (1 mark)
- (b) sodium; (1 mark)
- (c) phosphorus. (1 mark)
15. Define the following terms:
- (i) digestion; (1 mark)
- (ii) basal metabolism; (1 mark)
- (iii) food allergy. (1 mark)

16. Highlight **three** symptoms of rickets. (3 marks)
17. Identify **three** enzymes responsible for digestion in the small intestine. (3 marks)
18. State **three** characteristics of spoiled food. (3 marks)
19. Highlight **three** reasons for preserving food. (3 marks)
20. Explain **three** nutrients required in higher amounts for people living with HIV/AIDS. (3 marks)

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

*Answer **THREE** questions from this section in the spaces provided.*

***Question 21 is compulsory.***

21. (a) State **three** guidelines in the use of non-stick metal pans. (3 marks)
- (b) Highlight **three** benefits of work schedules. (3 marks)
- (c) Identify **four** ways used to conserve energy during cooking. (4 marks)
22. (a) Highlight **three** measures taken to keep the kitchen waste bin hygienic. (3 marks)
- (b) State **four** uses of sugar in cookery. (4 marks)
- (c) Describe **four** types of soups. (8 marks)
23. (a) State **three** reasons for using herbs and spices in the diet. (3 marks)
- (b) State **two** advantages of each of the following methods of cooking:
- (i) braising; (2 marks)
- (ii) baking. (2 marks)
- (c) Explain **four** guidelines for roasting a beef joint. (8 marks)
24. (a) Identify **three** types of salad dressings. (3 marks)
- (b) Differentiate between the following:
- (i) glazing and basting; (2 marks)
- (ii) fricassée and meunière. (2 marks)
- (c) Explain **four** factors to consider when planning meals for the elderly. (8 marks)