

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:

$$24 \div 3 + 4 \times 5 - 8 \div 4 \times 10 + 1 \quad (3 \text{ marks})$$

2. Ten men working 2 hours per day can complete a piece of work in 5 days. What percentage of the same work is done by 5 men working 1 hour per day by the end of the fourth day. (3 marks)

3. A rectangular mat measuring 10 m by 8 m is spread on the floor measuring 14 m by 12 m. Calculate the area not covered by the mat in cm^2 . (3 marks)

4. Determine the value of y in $\frac{y-7}{5+y} = 2$. (3 marks)

5. An American tourist arrived in Mombasa for vacation. She converted US\$ 4,500 at the rates shown in Table 1.

Table 1

Currency	Buy	Sell
1US\$	81.70	82.50
1UK£	127.50	128.40

She spent Ksh 82,480 to buy carvings and Ksh 92,000 on accommodation. She converted the balance to sterling pounds before she left for London. Determine the balance she had in sterling pound. (3 marks)

6. A basket contains 6 oranges and 4 mangoes. Two fruits are picked at random from the basket one at a time. Use a tree diagram to determine the probability of picking one orange and one mango. (3 marks)

7. The marks obtained by second year students in a mathematics test is shown in Table 2.

Table 2

Marks	13	14	15	16	17	18
Frequency	3	5	5	4	2	1

Determine the:

- (a) total number of students; (2 marks)

- (b) mode. (1 mark)

8. Figure I represents the number of students registered for various courses in a Technical Institute.

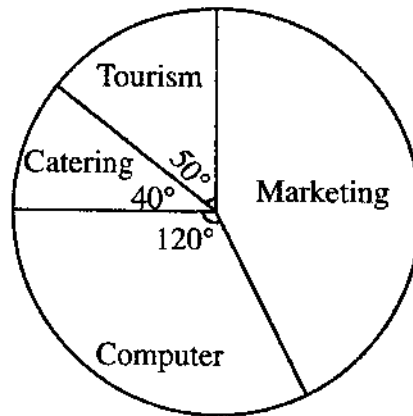


Figure 1

The number of students studying computer is 240.

- (i) Calculate the total number of students in the institute; (1 mark)
 - (ii) Find the number of students registered for marketing. (2 marks)
9. Table 3 shows the marks obtained by students in a mathematics test.

Table 3

x	f	$x - \bar{x}$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
8	1			
9	1			
10	1			
11	1			
12	1			
14	1			
15	1			
17	1			

The mean \bar{x} of the data is 12. Complete the table and calculate the variance (3 marks)

- 10. (a) Define sampling. (2 marks)
- (b) State one type of sampling. (1 mark)

SECTION B: FOOD SCIENCE AND NUTRITION (30 marks)

Answer ALL the questions in this section.

11. State **three** functions of calcium. (3 marks)
12. State **three** functions of saliva in the digestion of food. (3 marks)
13. Highlight **three** ways in which the ileum is suited for absorption of nutrients. (3 marks)
14. Explain **three** effects of heat on protein. (3 marks)
15. Highlight **three** advantages of vegetarianism. (3 marks)
16. State **three** benefits of snacking in between meals for growing children. (3 marks)
17. Identify **three** micro-organisms that are useful in food production. (3 marks)
18. State **three** disadvantages of using bicarbonate of soda in the cooking of green vegetables. (3 marks)
19. Highlight **three** nutrients required in higher amounts after surgery. (3 marks)
20. State **three** disadvantages of freezing as a method of food preservation. (3 marks)

SECTION C: FOOD AND BEVERAGE PRODUCTION (40 marks)

Answer Question 21 and any other TWO questions from this section.

21. (a) State **three** measures taken to discourage infestation of pests and rodents in the kitchen. (3 marks)
- (b) Highlight **three** points to note in the care of kitchen scales. (3 marks)
- (c) Identify **four** hygiene requirements of kitchen staff. (4 marks)
22. (a) List **six** equipment used in portion control. (3 marks)
- (b) Differential between the following:
- (i) Béchamel and Espagnole; (2 marks)
- (ii) Chiffonade and Brunoise; (2 marks)
- (iii) Concassé and Purée. (2 marks)
- (c) Explain **three** measures taken to prevent contamination during cooking. (6 marks)
23. (a) State **three** reasons why mayonnaise may curdle during preparation. (3 marks)
- (b) State **three** quality points in purchasing of each of the following:
- (i) liver; (3 marks)
- (ii) root vegetables. (3 marks)
- (c) Explain **three** methods of tendering meat. (6 marks)
24. (a) Outline **five** guidelines for making sandwiches. (5 marks)
- (b) State **two** causes of each of the following:
- (i) close texture in yeast mixtures; (2 marks)
- (ii) fat oozes out of pastry. (2 marks)
- (c) Describe **three** methods of baking. (6 marks)