

Name: \_\_\_\_\_ Index No: \_\_\_\_\_/\_\_\_\_\_

1909/102

1916/102

**BUSINESS CALCULATIONS AND STATISTICS**

July 2013

Time: 2½ hours

Candidate's Signature: \_\_\_\_\_

Date: \_\_\_\_\_



MANYAM FRANCHISE

Discover|Learn|Apply

**THE KENYA NATIONAL EXAMINATIONS COUNCIL**

**CERTIFICATE IN MARITIME TRANSPORT OPERATIONS  
CERTIFICATE IN ROAD TRANSPORT MANAGEMENT**

**BUSINESS CALCULATIONS AND STATISTICS**

**2½ hours**

**INSTRUCTIONS TO CANDIDATES**

*Write your name and index number in the spaces provided at the top of this page.*

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

*The paper is composed of TWO sections; A and B.*

*Answers ALL the questions from both sections in the spaces provided after each question.*

*Show all your working.*

*Candidates should answer the questions in English.*

**For Examiner's Use Only**

**Section A**

|          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |       |  |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|-------|--|
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | TOTAL |  |
| Marks    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |       |  |

**Section B**

|          |    |    |    |    |       |
|----------|----|----|----|----|-------|
| Question | 21 | 22 | 23 | 24 | TOTAL |
| Marks    |    |    |    |    |       |

**GRAND  
TOTAL**

**This paper consists of 14 printed pages.**

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

© 2013 The Kenya National Examinations Council.

**Turn over**

**SECTION A (40 mark)**

*Answer ALL the questions in the spaces provided.*

1. James sells fishing rods at Ksh 1000 per unit. He gives quantity discount of  $10\frac{1}{2}\%$  to a customer who purchases 40 to 80 units. A customer bought 75 fishing rods. Calculate the net amount paid by the customer. (2 marks)

---

---

---

---

---

2. State two factors that determine the rate of exchange of a country's currency with those of other countries. (2 marks)

---

---

3. A business lady had 196 containers to be ferried in ships. Each ship can carry a maximum of 24 containers. Determine the extra number of containers required in order to have each ship filled to capacity. (2 marks)

---

---

---

---

4. Outline two basis of classifying data. (2 marks)

---

---

5. John, Paul and Joshua are partners in a firm. Their capital contributions are Ksh 200,000, Ksh 900,000 and Ksh 500,000, respectively. They share profits and losses according to the ratio of their capital contribution. Determine the amount that each partner received if the total profit for the year 2011 was Ksh 96,000. (3 marks)

---

---

---

---

---

6. Highlight two uses of index numbers in business. (2 marks)

---

---

7. The ages of fifteen workers in a marine firm are as follows: 49, 57, 33, 38, 55, 40, 26, 34, 47, 41, 50, 44, 32, 35 and 28 years. Determine their average age. (1 mark)

---

---

8. The cost price of a radio was Ksh 2,000. It was sold for Ksh 2,500. Calculate the mark up. (2 marks)

---

---

9. A company insured factory buildings against fire at an annual premium of Ksh 15 per Ksh 500. Calculate the amount of annual premium paid if the factory buildings were valued at Ksh 5,200,000. (1 mark)

---

---

10. Explain each of the following sampling methods:  
(i) quota sampling;  
(ii) systematic sampling. (2 marks)

11. A carpenter makes small boats and oar sticks. The cost of making 3 small boats and 6 oar sticks is Ksh 13,500. The cost of making 2 small boats and 4 oar sticks is Ksh 9,650. Calculate the cost of making each of the two items. (3 marks)

---

---

---

---

---

---

---

---

12. Joseph and Mary take 6 minutes to arrange fish in a tray. Mary alone takes 10 minutes to arrange the same number of fish. Determine the time it will take Joseph alone to arrange the same number of fish. (2 marks)

---

---

---

---

---

---

---

---

13. The net profit for a transport company in its first year of operation was Ksh 1,000,000. The net profit increased by Ksh 400,000 yearly. Determine the profit realized in the fifth (5<sup>th</sup>) year. (2 marks)

---

---

---

---

---

---

---

---

14. The table below shows the distribution of scores that were awarded to 30 people interviewed for a job by a firm.

| Scores  | No. of interviewees |
|---------|---------------------|
| 0 - 10  | 1                   |
| 10 - 20 | 8                   |
| 20 - 30 | 15                  |
| 30 - 40 | 4                   |
| 40 - 50 | 2                   |

Calculate the modal score.

(2 marks)

---

---

---

---

15. Distinguish between statistical methods and applied statistics.

(2 marks)

---

---

---

---

---

---

---

16. State two limitations of using index numbers as a measure of variability.

(2 marks)

---

---

---

---

17. The table below shows the supply of fish by a fisherman for the first 6 months of 2012 to two hotels; A and B.

| Month        | Jan | Feb | Mar | Apr | May | June |
|--------------|-----|-----|-----|-----|-----|------|
| Hotel A (kg) | 50  | 35  | 40  | 20  | 35  | 30   |
| Hotel B (kg) | 80  | 100 | 120 | 70  | 110 | 90   |

Determine the percentage of fish supplied to hotel A.

(1 mark)

---

---

---

18. State two disadvantages of **observation** as a method of collecting data.

(2 marks)

---

---

---

---

19. The cash price of a colour television set is Ksh 30,000. A dealer charges 20% more on hire purchase. A customer paid a deposit of Ksh 12,000 and 20 equal monthly instalments. Calculate the amount of each monthly instalment.

(3 marks)

---

---

---

---

---

---

---

20. Jane's monthly income was taxed as per the table below.

| Monthly income (Ksh) | Tax rate (%) |
|----------------------|--------------|
| First 10164          | 10           |
| Next 9578            | 15           |
| Next 9578            | 20           |
| Next 9578            | 25           |
| over 38,898          | 30           |

Jane's taxable income for the month of January, 2011 was Ksh 28,000. Calculate her gross taxable liability for the month. (2 marks)

---

---

---

---

---

**SECTION B (60 marks)**

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

21. (a) The following table shows the distribution of the weights in kilograms of 178 parcels delivered to a port for a period of one week.

| Weights (kg)   | 60 - 64 | 65 - 69 | 70 - 74 | 75 - 79 | 80 - 84 | 85 - 89 | 90 - 94 | 95 - 99 |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| No. of parcels | 10      | 36      | 45      | 54      | 12      | 8       | 9       | 4       |

Calculate the median weight of the parcels. (8 marks)

---

---

---

---

---

---

---

---

---

---

(b) The following data represents the price of a fishing net from the year 2005 to 2011.

|                |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|
| Year           | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| Price in (Ksh) | 2500 | 2800 | 3000 | 3300 | 3600 | 4000 | 4500 |

Calculate the fixed base index numbers, using 2005 as the base year. (7 marks)





- (b) A business lady bought 1200 oranges at Ksh 60 for every 50 oranges from a farmer. Her family ate 100 of the oranges and 20 got spoilt. She sold the remaining oranges in piles of 8. Calculate the selling price per pile if she wished to make a total profit of Ksh 720. (8 marks)

23. (a) Outline four limitations of using statistics in business decision making. (8 marks)

---

---

---

---

---

---

---

---

---

---

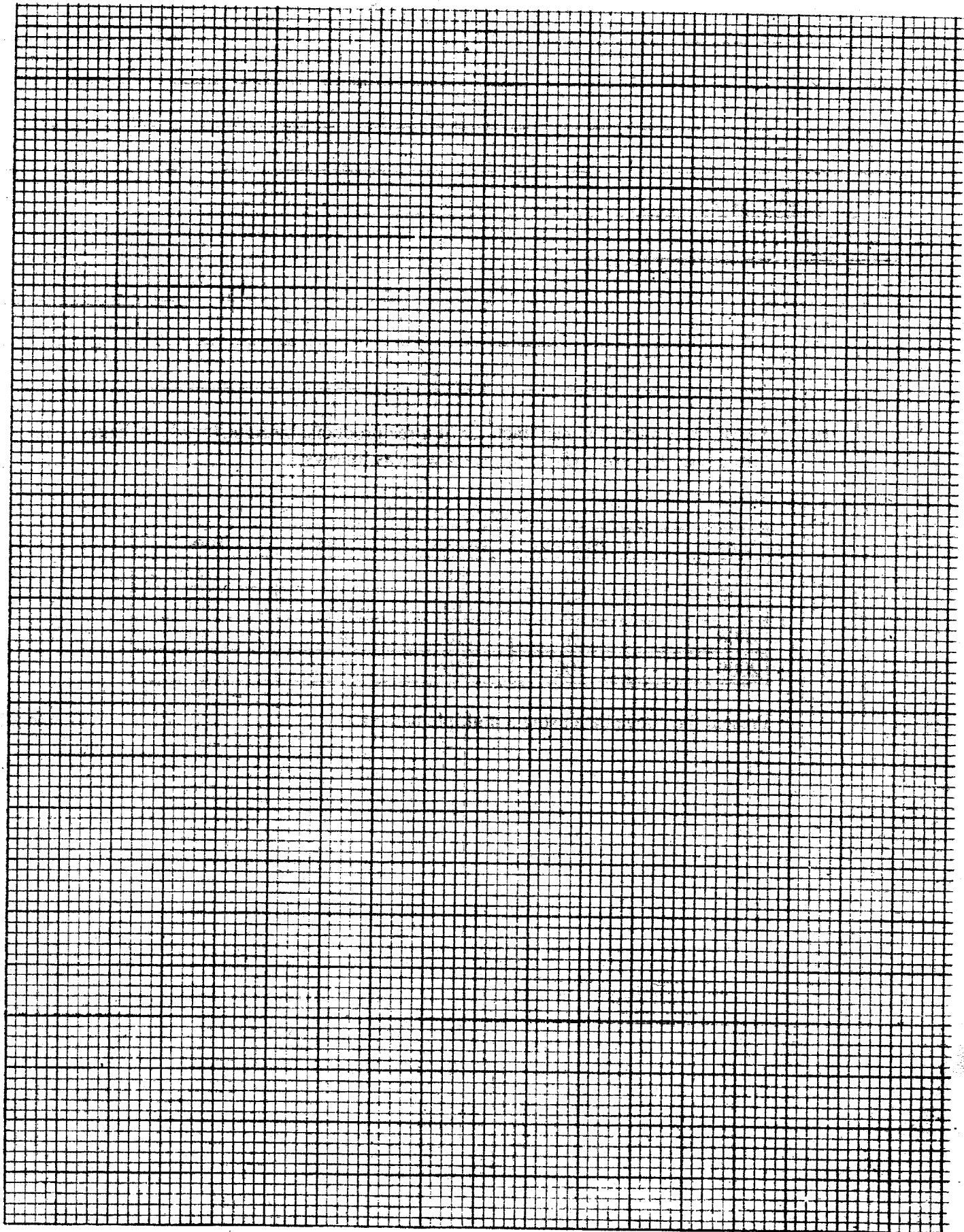
(b) SAMCO Limited is a manufacturer of three products: biscuits, bread and cakes. The firm's sales for a period of four years were as follows:

Sales (Ksh '000')

| Year | Biscuits | Bread | Cakes | Total |
|------|----------|-------|-------|-------|
| 2006 | 60       | 90    | 50    | 200   |
| 2007 | 70       | 110   | 60    | 240   |
| 2008 | 80       | 110   | 40    | 240   |
| 2009 | 100      | 130   | 0     | 230   |

Present the above data using a multiple bar chart.

(7 marks)



1909/102  
1916/102

24. (a) Mrs Kimani wrote her will in which she shared her money in the bank as follows;  $\frac{1}{5}$  to her eldest son,  $\frac{1}{4}$  to each of her other two sons, Ali and Carey,  $\frac{1}{8}$  to her husband,  $\frac{1}{6}$  to her daughter and the remaining amount to her younger sister. If her younger sister was to receive Ksh 48,000, determine the:

- (i) total amount she had in the bank.
- (ii) amount each person would receive.

(6 marks)

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

(b) An American tourist visited Kenya in July 2012 and he had U.S \$ 10,000 in travellers cheques. He changed all his cheques to Kenya shillings, paying a bank charge of 1%. He spent Ksh 300,000 during his stay in Kenya. On his way back, he changed the remaining cash into U.S \$ again, paying a bank charge of 1%. Calculate the amount the tourist received in U.S \$.  
Take: U.S \$ 1 = Ksh 88.90.

(9 marks)