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**BUSINESS CALCULATIONS AND  
STATISTICS**

**July 2023**

**Time: 3 hours**



**THE KENYA NATIONAL EXAMINATIONS COUNCIL**

**CRAFT CERTIFICATE IN PROJECT MANAGEMENT  
CRAFT CERTIFICATE IN SUPPLY CHAIN MANAGEMENT  
CRAFT CERTIFICATE IN BUSINESS MANAGEMENT  
CRAFT CERTIFICATE IN HUMAN RESOURCE MANAGEMENT**

**MODULE I**

**BUSINESS CALCULATIONS AND STATISTICS**

**3 hours**

**INSTRUCTIONS TO CANDIDATES**

*This paper consists of TWO sections; A and B.*

*Answer ALL the questions from both sections in the answer booklet provided.*

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

*Candidates should answer the questions in English.*

**This paper consists of 5 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 (40 marks)**

*Answer ALL questions from this section.*

1. The cost of a refrigerator is seven times that of a microwave. The total cost of a refrigerator and a microwave is Ksh. 72,700.  
Determine the cost of a microwave. (2 marks)
2. Debie and Frank shared their assets worth Ksh. 560,000 in the ratio of 4:3, respectively.  
Determine Frank's share. (2 marks)
3. A businessman offers a commission of Ksh. 120 for every Ksh 4,800 worth of goods sold. Brian sold goods worth Ksh. 152,800. Calculate the commission he earned. (2 marks)
4. Distinguish between taxable income and gross income, as used in taxation. (2 marks)
5. A fruit vendor bought bananas in bunches of 15 bananas each at Ksh. 50 per bunch. She cut them into smaller bunches of 3 bananas each and sold them at Ksh. 8 per bunch.  
Determine her percentage loss. (2 marks)
6. The marked price of a sewing machine is Ksh. 18,000. A tailor bought it on hire purchase and paid a total amount of 125% of the marked price.  
Calculate the total amount the tailor paid. (2 marks)
7. A Kenyan visited USA. He had a total of Ksh. 691,985. He converted all the money into US Dollars at the rate of Ksh. 110.28 per dollar.  
Calculate the amount he received in US Dollars. (2 marks)
8. State **two** limitations of using statistics in making business decisions. (2 marks)
9. The profit after taxation of a sugar company was Ksh. 28,000,000. The profit increased by Ksh. 6,000,000 yearly.  
Calculate the profit realized in the sixth year. (2 marks)
10. State **two** methods of constructing weighted index numbers. (2 marks)
11. In a firm, there are 12 workers whose ages are as follows:  
33, 49, 51, 45, 37, 57, 43, 35, 29, 36, 47, 26.  
Determine the median age. (2 marks)

12. The following data shows the allowances, in Kenya shillings, earned by different workers in a company.

13,000 7,000 18,000 12,000 5,000

Determine the co-efficient of range. (2 marks)

13. Highlight **two** advantages of interviews as a method of data collection. (2 marks)

14. Solve:  $18 - 20 \div 5 \times 2$ . (2 marks)

15. Differentiate between an independent variable and a dependent variable. (2 marks)

16. A letter is chosen at random from the word 'CORRELATION'.

Determine the probability that the letter is a consonant. (2 marks)

17. Explain **two** uses of regression analysis in statistics. (2 marks)

18. A businessman deposited Ksh. 10,000,000 in a bank that pays interest at the rate of 14% per annum, compounded semi-annually.

Calculate the amount he received after three years. (2 marks)

19. Highlight **two** advantages of using tabulation in data classification. (2 marks)

20. Differentiate the following equation:

$$y = x^3 - 6x^2 + 5x + 7$$

(2 marks)

**SECTION B (60 marks)**

*Answer ALL questions from this section.*

21. (a) Explain **four** advantages of using median as a measure of central tendency. (8 marks)
- (b) The ratio of Modesai's earning to Hawi's earning was originally 5:3. When Modesai's earning was increased by 12% in a certain month, he got Ksh. 56,000. Their total earnings for the new month was Ksh. 96,000. Calculate the percentage change on Hawi's earning. (7 marks)
22. (a) A company manufactured 80,000 mobile phones in 2018 at a cost of Ksh. 7,500 each and sold all of them the same year. The cost of manufacturing mobile phones increased by 15% in the year 2019. In the same year, the company manufactured 100,000 mobile phones and sold all of them. The company sells its phones at a mark-up profit of 50%. Determine the selling price per mobile phone for the years:
- (i) 2018;
- (ii) 2019. (6 marks)
- (b) A company bought a machine on 30<sup>th</sup> June 2019 at a cost of Ksh 1,000,000. The machine was depreciated at the rate of 10% per annum.
- (i) State **one** reason which could have led to the depreciation of the machine.
- (ii) Calculate the value of the machine as on 31<sup>st</sup> December:
- (I) 2019;
- (II) 2020;
- (III) 2021 →
- (iii) The machine was sold off by the company on 31<sup>st</sup> December 2021 at Ksh 769,500. Calculate the loss or gain at which the machine was sold. (9 marks)
23. (a) Explain **four** objectives of measuring dispersion. (8 marks)

- (b) A business lady purchased two shirts and three pairs of trousers at a total of Ksh. 6,000. On another day, she bought one similar shirt and two pairs of trousers from the same shop at a total cost of Ksh. 3,500.

Determine the cost of:

- (i) **four** shirts;  
(ii) **five** pairs of trousers.

(7 marks)

24. (a) John bought a car in Japan at a factory price of 50,000 Japanese Yen. It was later imported into Kenya. The cost of shipping and insurance of the car was 80% of its price. A further customs duty charge of 50% on cost was paid.

Calculate the total amount, in Kenya shillings, the importer paid for the car.

Take: 1 Japanese Yen = Ksh. 100.69

(7 marks)

- (b) The probability that a man will work for twenty years is 0.6 and the probability that his wife will also work for the same number of years is 0.4.

Determine the probability that:

- (i) both will work for twenty years;  
(ii) only the man will work for twenty years;  
(iii) only the wife will work for twenty years;  
(iv) only one of them will work for twenty years.

(8 marks)

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