1903/102
1906/102
1922/102
BUSINESS CALCULATIONS
AND STATISTICS
November 2017
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN SUPPLY CHAIN MANAGEMENT
CRAFT CERTIFICATE IN BUSINESS MANAGEMENT
CRAFT CERTIFICATE IN PROJECT 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 in both sections in the answer booklet provided.
Show ALL your working.
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.

SECTION A (40 marks)

Answer ALL the questions in this section.

1. A school was supplied with 3 computers at a cost of Ksh. 13,500 each and 2 printers at a cost of Ksh. 8,400 each. Determine the total cost of the items. (2 marks)

2. Four partners; A, B, C and D shared a sum of money such that A received twice the amount received by B; B received three times as much as C and C received twice as much as D. Determine the ratio at which they shared the sum of money. (2 marks)

3. A trader bought 8 pens each at the same price. He later sold 4 pens at Ksh. 18 each and the rest at Ksh. 15 each. His total profit was Ksh. 48. Determine the cost of each pen. (2 marks)

4. The marked price of a bicycle is Ksh. 5,000. Peter bought the bicycle and he was allowed a discount of 10%. Determine the price at which Peter bought the bicycle. (2 marks)

5. In the month of June 2017, a casual worker worked for 20 days normal working time and an overtime of 5 hours. He is paid Ksh. 1,200 per normal working day and Ksh. 300 for every overtime hour. His gross earnings are taxed at 10%. Calculate the amount of tax that he paid for the month. (2 marks)

6. The marked price of a pair of shoes is Ksh. 3,400. The price of the shoes was reduced by 15%. Determine the selling price of the pair of shoes. (2 marks)

7. The hire purchase price of a printing machine is Ksh. 450,000. A deposit of Ksh. 50,000 is required and the balance is paid in 20 equal monthly instalments. Calculate the amount of each instalment. (2 marks)

8. A businessman imported goods worth Ksh. 434,000 from Britain. Determine the value of the goods in Sterling pounds.
   Take: £1 = Ksh. 135 (2 marks)

9. Determine the next term in the following sequence

   $-\frac{1}{3}, -1, -3, -9, -27,$ _____

   (2 marks)

10. The fixed base price index of a commodity in the year 2016 was 14%. The price of the commodity in the base period was Ksh. 80. Determine the price of the commodity in the year 2016. (2 marks)

11. Differentiate the following function with respect to x

    $y = 3x^3 + 2x^2 + x$ (1 mark)

12. State **two** limitations of statistics. (2 marks)

13. Define each of the following terms as used in statistics:

    (a)   Primary data;

    (b)   Secondary data.

(2 marks)

14. Highlight **two** advantages of tabulating data. (2 marks)

15. The total population in a college is 300 persons. The population constitutes 60 members of teaching staff, and $\frac{2}{3}$ of the remaining population are students. The rest are non-teaching staff. Present this information in a pie chart. (3 marks)

16. State **two** qualities of a good average. (2 marks)

17. Outline **two** advantages of mean deviation as a measure of dispersion. (2 marks)

18. The correlation coefficient (r) for a set of variables x and y was found to be 0.88. Interpret this value of r. (2 marks)

19. A supplier of a commodity applied for a tender in two different firms, A and B. The probability of being awarded a tender in firm A is $\frac{2}{3}$. The probability of not being awarded a tender in firm B is $\frac{5}{9}$. Calculate the probability that he will be awarded both tenders. (2 marks)

20. Arden borrowed Ksh. 100,000 from a bank at a compound interest rate of 14% per annum. Determine the amount of interest that Arden will pay at the end of 3 years. (2 marks)

SECTION B (60 marks)

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

21. (a) The management of a firm interviewed 2,500 applicants for employment. 1,500 of the applicants were skilled and the rest were unskilled. Among the skilled, 900 were experienced and the rest had no experience. Among the unskilled, 300 had experience. Present this information using a table. (7 marks)

    (b)   The table below shows the distribution of the number of water pipes sold to 30 retailers in a town.

Number of water pipes	48 - 50	51 - 53	54 - 56	57 - 59	60 - 62
Number of retailers	4	3	14	8	1

Calculate the standard deviation. (7 marks)

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Turn over

22. (a) Explain **four** qualities of a good questionnaire. (8 marks)

(b) A basket contains 10 bananas. Six of the bananas are ripe while the rest are unripe. Three bananas are picked from the basket at random one after the other, with replacement.

    (i) Using a tree diagram, show the possible outcomes;

    (ii) Determine the probability that all the three bananas picked will be unripe.

(8 marks)

23. (a) Grade A coffee costs Ksh. 600 per kilogram, while one kilogram of Grade B coffee costs Ksh. 450. The two grades were mixed to produce a blend of coffee that costs Ksh. 500 per kilogram. Determine the ratio in which the two grades were mixed.

(7 marks)

(b) A bakery produced 440 loaves of bread on the 8th day of its operations. The number of loaves of bread it produced on the 23rd day were 800. The number of loaves of bread the bakery produces each day follows an arithmetic progression. Determine the total number of loaves of bread the bakery produced in the first 20 days of its operations.

(8 marks)

24. (a) The demand function for a product P is given by $P = 20.8 - 2.6\,x$, where x represents the number of units demanded in thousands. Determine the number of units to be produced in order to maximise total revenue. (7 marks)

(b) Explain **four** factors that should be considered when constructing index numbers.

(8 marks)

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