CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

CHUKA/EMBU/THARAKA

FIRST YEAR EXAMINATION FOR THE CERTIFICATE IN BUSINESS MANAGEMENT AND CERTIFICATE IN PROCUREMENT AND LOGISTICS MANAGEMENT

CIBM 00151: BUSINESS MATHEMATICS

STREAMS: CIBM,CPLM Y1S1   **TIME: 2 HOURS**

DAY/DATE: THURSDAY 06/12/2018   **2.30 P.M – 4.30 P.M**

INSTRUCTIONS:

1 **Answer question one and any other two questions**
2 **Do not write on the question paper**

1.   The following is data concerning students marks in a business mathematics subject.

Marks	No. of students
0-10	2
10 – 20	7
20 – 30	11
30 – 40	6
40 – 50	4

Required :

Determine the following ;

(i)   Arithmetic mean   [5 marks]
(ii)   Median mark   [5 marks]
(iii)   The mode   [5 marks]
(iv)   Geometric mean   [5 marks]
(v)   Standard deviation   [5 marks]

(b) Explain any five features of a good questionnaire.   [5 marks]

2.   (a) Sampling is a method of collecting data where a few units from the whole population are selected and the results obtained on the basis of these few units is generalized for the whole population. State any four advantages of sampling.   [4 marks]

(b) Two numbers ae in the ratio of 2:3 and if 6 is subtracted from each the reminder are in the ratio 4:9. Determine the numbers.   [5 marks]

(c) The monthly incomes of two persons are in the ratio of 4:5 and their monthly expenditures are in the ratio of 7:9 . If each saves ksh 50 per month, find their monthly income.   [5 marks]

(d) Mr. Kamau deposited ksh 40,000 into a fixed deposit account at an interest rate of 12% p.a (compound rate). He withdrew ksh 25,000 at the end of 3 years. Find out the balance in his deposit account at the end of 4 years.   [6 marks]

3.   (a) Robert sold an article for ksh 2500 making a profit of 25% on cost . Find out the cost price.   [5 marks]

(b) James and Omondi are partners in a business. Omondi is entitled to a salary of ksh 20,000 p.a. Profit sharing ratio of James and Omondi is 3:2 respectively. If the profit for the year 1998 was 80,000, calculate how much each partner would receive. [6 marks]

(c) Explain any five reasons for studying business mathematics.   [5 marks]

(d) The market price of a coloured TV set is ksh 22,500. A dealer charges 20% more on hire purchase. If the deposit is ksh 6000, calculate the amount of monthly instalment if there are 15 equal instalments.   [4 marks]

4.   (a) Find the harmonic mean of the following data 8,5,16,20 28.   [5 marks]

(b) A fair die that has 6 faces is thrown. What is the probability of having face 3 or face 6 in a throw.   [3 marks]

(c) The following exchange rates are provided.

1 usd   = ksh 100

1 £   = ksh 130

An American tourist travelled to Germany carrying USD 2000. How many sterling pounds (£) did he get when he converted the USD to £ in Germany.   [3 marks]

(d) State any three reasons why the government levies taxes to persons living in the county.   [3 marks]

(e) Omolo is an employee of sokomoko ltd. His basic monthly salary is ksh 40,000. In addition to the basic salary he is also entitled to a monthly house allowance of ksh 7,000 and a medical allowance of ksh 8,000. The following tax rates are applicable for the period.

Annual taxable income (ksh)	tax rate
1- 147,580	10%
147,581 – 286,623	15%
286,624 – 425,666	20%
425,667 – 564,709	25%
564,710 and above	30%

He is also entitled to a personal relief of ksh 1408 per month.

Required :

Determine his PAYE per annum.   [6 marks]