CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DIPLOMA IN BUSINESS MANAGEMENT

DIBM 0223: BUSINESS STATISTICS

STREAMS: DIBM   **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY06/12/2017   **8.30 A.M. – 10.30 A.M.**

INSTRUCTIONS: ANSWER ALL QUESTIONS

QUESTION ONE

(a)   Distinguish between each of the following

    (i)   Continuous and discrete distribution function   [2 marks]

    (ii)   Mutually exclusive events and collectively exhaustive events.   [2 marks]

    (iii)   Descriptive statistics and inferential statistics   [2 marks]

    (iv)   Snowball sampling and systematic sampling   [2 marks]

(b)   The time taken by the milkman to deliver milk daily to some busy streets is normally distributed with a mean of 12 minutes and standard deviation of 2 minutes. Estimate how long during a day when he takes:

    (i)   Longer than 17 minutes   [2 marks]

    (ii)   Less than 10 minutes   [2 marks]

    (iii)   Between 9 and 13 minutes   [1 mark]

(c)   The following table gives the number of days in a 50 day period during which automobile accidents occurred in a city. Fit Poisson distribution to the data.   [4 marks]

Number of accidents	0	1	2	3	4
Number of days	21	18	7	3	1

(d)   Explain the limitations of statistics.   [3 marks]

QUESTION TWO

(a)   The following data shows the marks second by 50 students in statistics subject.

Scons	65-69	70-74	75-79	80-84	85-89	90-94	95-99
Frequency	3	5	15	12	7	6	2

From the information above. Calculate;

(i)   Mean   [2 marks]

(ii)   Median   [2 marks]

(iii)   Mode   [2 marks]

(iv)   Standard deviation   [3 marks]

(v)   The third quartile   [2 marks]

(vi)   The 8th deciles   [2 marks]

(vii)   The 65th percentiles   [2 marks]

(b)   Discuss the role of statistics in the decision making process.   [5 marks]

QUESTION THREE

(a)   Discuss the statistical process.   [5 marks]

(b)   The following table shows the length of 40 leaves

Length (mm)	Frequency
118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

Draw a histogram and frequency polygon on the same axis.   [6 marks]

(c)   Outline properties of a good measure of dispersion.   [4 marks]

QUESTION FOUR

(a)   In Jatomy supermarket, 70% of the customers pay by credit card. Find the probability that in a randomly selected sample of 12 customers at least 2 pay by credit card.[2 marks]

(b)   The data below shows incomes and corresponding expenditure on food for seven families all given in ksh '000'.

Income	35	49	21	39	15	28	25
Expenditure	9	15	7	11	5	8	9

    (i)   Find the regression model.   [5 marks]

    (ii)   Explain the values b_o and b_1 [1 mark]

    (iii)   Calculate the Karl Pearson's correlation coefficient.   [2 marks]

(c)   Highlight three aspects to consider when designing a good questionnaire.   [3 marks]

(d)   Explain the sources of primary data.   [2 marks]