TECHNICAL UNIVERSITY OF MOMBASA

UNIVERSITY EXAMINATIONS 2018/2019

EXAMINATION FOR DIPLOMA

BAC 2103: BUSINESS STATISTICS

END OF SEMESTER EXAMINATIONS

SERIES: AUGUST 2019

<u>**DATE: AUGUST 2019**</u>   **A**   **DURATION: 2 HOURS**

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO

QUESTION ONE

(a) Give the methods used in Statistics.   **(3 marks)**

(b) Give an explanation of any two of these methods   **(6 marks)**

(c) Give the uses of statistics in a Business Organization.   **(3 marks)**

(d) Draw a Lorenz curve using the above data and give comments about it.   **(10 marks)**

Property values and Numbers

Value of Property ($ 000)	Number of Properties
$10 \leq x < 15$	2
$15 \leq x < 20$	6
$20 \leq x < 25$	14
$25 \leq x < 30$	21
$30 \leq x < 35$	33
$35 \leq x < 40$	19
$40 \leq x < 45$	5
Total	100

(e) i.) Give some of the important causes of errors in data measurements. **(4 marks)**

ii.) Calculate the range of possible values for the expression: $\dfrac{4.12-8.3}{0.8}$, where each term has

rounded. **(4 marks)**

QUESTION TWO

Below is data given in raw form for the numbers of orders received by a company over 40 weeks:

24	13	28	15	25	29	15	46
9	10	17	22	23	17	16	32
11	12	18	20	13	27	18	22
20	14	26	14	19	19	40	31
17	21	23	26	18	24	21	27

(a) Group the data into classes and prepare a Tally chart for the data above. **(8 marks)**

(b) Prepare a frequency distribution for (a) above. **(4 marks)**

(c) Draw a histogram for the frequency distribution in (b). **(8 marks)**

QUESTION THREE

(a) What is a Z-chart and where is it used? **(4 marks)**

(b) The following data give the monthly sales, in thousands of litres, of a petrol service station over a two-year period:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year 1	150	154	183	162	181	149	130	152	186	199	193	168
Year 2	162	163	171	158	175	145	121	138	172	175	163	152

Represent these figures diagrammatically using a Z-chart. **(12 marks)**

(c) Comment on the diagram drawn in (b) above. **(4 marks)**

QUESTION FOUR

A machine produces circular bolts and, as a quality control test, 250 were selected randomly and the diameter of their heads measured.

Diameter of head (cm)	Number of components	Diameter of head (cm)	Number of components
0.9747-0.9749	2	0.9765-0.9767	49
0.9750-0.9752	6	0.9768-0.9770	25
0.9753-0.9755	8	0.9771-0.9773	18
0.9756-0.9758	15	0.9774-0.9776	12
0.9759-0.9761	42	0.9777-0.9779	4
0.9762-0.9764	68	0.9780-0.9782	1

Find

(a) the mean (4 marks)

(b) the standard deviation (6 marks)

(c) Draw a cumulative frequency distribution and use it to find the Median. (10 marks)

QUESTION FIVE

(a.) Describe the following terms:

(i.) Index Number (2 Marks)

(ii.) Composite Index Number (2 Marks)

(iii.) Laspeyres Index (2 Marks)

(iv.) Paasche Index (2 Marks)

(b.) The following data relate to a set of commodities used in a particular process. Calculate Laspeyres and Paasche price indices for period 1. (12 Marks)

Commodity	Unit of Purchase	Base period Price ($)	Base period Quantity (Units)	Period 1 Price ($)	Period 1 Quantity (Units)
A	2 liter drum	36	100	40	95
B	1 tonne	80	12	90	10
C	10 kg	45	16	41	18
D	100 metres	5	1100	6	1200