CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF EDUCATION

BUST 212: QUATITATIVE METHODS IN BUSINESS

STREAMS: Y2S2

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 31/3/2021   **11.30 AM – 1.30 PM**

INSTRUCTIONS:
- Answer Question One and any other two questions

Q.1 (a) Give five reasons to explain the importance of quantitative analysis to an organization.
[10 Marks]

(b) In statistics, data is divided into discrete and continuous variables. Using suitable examples, distinguish between discrete and continuous variables.   [10 Marks]

(c) In a congested class 8 pupils in a city primary school, the following were the marks obtained in KCPE trials in January, 2021:

Marks	No of pupils
20-35	55
35-40	80
40-45	95
45-50	63
50-55	37
55-60	20

Required
Calculate
(i) The mean mark
(ii) The standard deviation
(iii) The coefficient of variation   [10 Marks]

Q.2(a) In statistics, data is usually collected from a sample and not from the whole population
(census). Give reasons to explain this.   [10 Marks]

(b) Chipsy is a very popular product in a particular market segment. The marketing department
of the manufacturer has estimated its demand function to be $P= 600 - 2q^2$ and its cost
function to be :

$C = 100-216q$

Where P is the price per unit and Q is the quality demanded C is the total cost per unit.

Required:
(i) The Revenue function
(ii) The quantity that would maximize revenue
(iii) The profit function
(iv) The quality that would maximize profit
(v) Comment on your results   [10 Marks]

Q3(a) Using suitable examples, distinguish between positive and negative correlation.
                                                                              [6 Marks]

(b) The profits of a company for a period of Eight years were as follows:

Year	Profit (millions)
2012	80
2013	100
2014	90
2015	125
2016	140
2017	120
2018	130
2019	150

Required

(i) Using the least squares method, determine the regression equation.   [8 Marks]

(ii) Using the equation, predict the profit for the year 2020.   [2 Marks]

(iii) Calculate the correlation coefficient and interpret your result.   [4 Marks]

Q4.(a) State and explain the components of a time series.   [10 Marks]

(b) Using suitable illustrations, distinguish between a multiplicative and additive models of a

time series.   [10 Marks]

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