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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR
DIPLOMA IN BUSINESS ADMINISTRATION
SPECIAL EXAMS
DBA 009-INTRODUCTION TO STATISTICS

Date: 1st August 2022
Time: 8.30am-10.30am

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE COMPULSORY (30 MARKS)

- a) Explain the following terms (6marks)
- Statistics
 - Probability distribution
 - A Set
- b) Differentiate between qualitative data and quantitative data giving an example of each (6marks)
- c) Find the lower quartile, upper quartile, quartile deviation and semi quartile deviation of the following scores (7 marks)
- 31, 27, 42, 40, 25, 50, 34, 45, 38.
- d) Given the time in seconds required to photograph one printing plate as : 20.4, 25.3, 22.9, 25.7, 21. 2, 22.9, 28.2, 20.0, 20.4 and 24.3 compute;
- e) Modal time (2 marks)
- f) Median time (2 marks)
- g) Two coins are tossed. What is the probability of at least one tail appearing? Use the binomial distribution formula (4marks)
- h) State three characteristics of a good measure of dispersion (3 marks)

QUESTION TWO (20 MARKS)

- a) Using regression analysis estimate the equation: $Y = a_0 + a_1 x$ given the following values; (10marks)

N	Y	X
1	70	80
2	65	100
3	90	120

4 95 140
5 110 160

- b) outline five advantages of arithmetic mean (4marks)
- c) kurtosis measures the peakedness of a data, using clear diagrams explain the three types of kurtosis
6marks

QUESTION THREE (20 MARKS)

- a) Geometric mean is used to calculate mean of a set of rate, the following are rises in productivity rates of workers of XYZ company: 16%, 25%, 34%, 20%, 42%, calculate the mean rate rise in productivity of workers leaving your answer in two decimal places.’ (5marks)
- b) Using the following data to construct a histogram and a frequency polygon on the same axes (7marks)

marks	no of students
20— 39	15
40 —59	24
60 — 79	6
80 —99	30
100 — 119	8
120 — 139	10

- c) statistic is widely used in different areas in life Explain 4 areas where statistics is applied (8marks)

QUESTION FOUR (20 MARKS)

- a) consider the following data of number of sales made by total number of salesmen

No of sales(classes)	No. of sales men(f)
0 to 4	5
5 to 9	14
10 to 14	18
15 to 19	21
20 to 24	16
25 to 29	8
total	82

b) Calculate the following showing all the calculations step by step:

- i. The mean 3marks
- ii. Mean deviation 4marks
- iii. Variance 3marks
- iv. Std deviation 2
- v. Coefficient of variation 2marks

c) Using clearly drawn diagrams explain the three types of skewness 6marks

QUESTION FIVE (20 MARKS)

a) Using your own examples differentiate clearly between union and intersection of sets starting with a universal set. 5marks

b) present each of the set examples you have given in i) in a venn diagram 5marks

c) There are several methods of collecting data, the method chosen depends on several factors, As a researcher from Kiriri University, discuss five factors you would consider when choosing a method of collecting data 10marks