LAIKIPIA UNIVERSITY

UNIVERSITY EXAMINATIONS

2ND SEMESTER 2023/2024 ACADEMIC YEAR

MASTERS EXAMINATION FOR BACHELOR OF EDUCATION

EPSC 811: STATISTICS IN EDUCATION

STREAM: R ***TIME: 2 HRS***

DAY: THURSDAY (8.30-11.30AM) ***DATE: 18/4/24***

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

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INSTRUCTIONS: ANSWER QUESTION **ONE** AND ANY OTHER **TWO**

SECTION A

QUESTION ONE (20 MARKS)

a) If the value of r = 0.9, r^2 = 0.81, what does r^2 mean? (2mks)

b) Describe the scales of measurement in statistics (8mks)

c) The items in an attitude scale are answered by tick marking any one of the five alternatives Strongly Agree, Agree, Indifferent, Disagree, Strongly Disagree. The distribution of answers to an item marked by 200 subjects is shown in the Table below. Do these answers diverge significantly from the distribution to be expected if there are no preferences in the group at 0.05 level of significant (10mks)

	Strongly Agree	Agree	Indifferent	Disagree	Strongly disagree	
Observed values	45	36	46	38	35	200
Expected	40	40	40	40	40	200

SECTION B

QUESTION TWO (20 MARKS)

(a) Use the data below to find the coefficient of correlation by using the product-moment method and describe the relationship (10mks)

X	36	48	30	39	45	22	38	36	37	44	29	43
Y	49	30	56	47	30	58	47	40	48	39	52	33

(b) Describe the properties of a normal curve (10mks)

QUESTION THREE (20 MARKS)

a) Find out the mean, median and mode of the following data (7mks)

Class Interval	Frequency
90-94	1
85-89	3
80-84	8
75-79	15
70-74	20
65-69	28
60-64	21
55-59	13
50-54	6
45-49	2
40-44	1

(b) Prepare a histogram for the above data (3mks)

(c) Sixty (60) subjects are asked to express their attitude towards a proposition by marking F (favourable) I (indifferent) or U (unfavourable). of the member in the group 30 marked F, 16 marked I and 14 marked U. Do these results indicate a significant trend of opinion? (10mks)

QUESTION FOUR (20 MARKS)

(a) The scores of undergraduate learners are as shown below, determine if there is any significant difference in the mean score of the students in their groups at 0.05 level of significant. (10mks)

Group 1 6, 8, 8, 6

Group 2 4, 3, 4, 6, 5

Group 3 5, 6, 8, 7, 8

b) suppose we want to test the basis of a random sample of size n=5, whether the fat content of a certain kind of processed meat exceed 30%. What can we conclude at 0.01 level of significance, if the sample values are 31.9, 30.3, 32.1, 31.7, and 30.9%? (10mks)

QUESTION FIVE (20 MARKS)

a) Explain the advantages of using mean as descriptive statistics in data analysis (8mks)

b) To see how students' reaction skills have improved over a year, eight students took a reactions test at the start of the year and at the end of the year. These are their scores:

Student	Kaminwa	Isaac	Bilha	Cate	purity	Ciku	Enos	Peter
First Test, x	56	75	61	61	67	72	62	61
Second Test, y	21	39	34	21	32	24	29	24

Find the equation of the regression line given that:

$\sum x=515$, $\sum y=224$, $\sum x2=33441$, $\sum y2=6576$ and $\sum xy=14590$. (12mks)