KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF BACHELOR OF EDUCATION ARTS
SECOND SEMESTER 2021/2022
[JUNE-SEPTEMBER, 2022]

GEOG 225: APPLIED STATISTICS IN GEOGRAPHY

STREAM: Y2S2   TIME: 2 HOURS

DAY: THURSDAY, 3:00 – 5:00 PM   DATE: 15/09/2022

INSTRUCTIONS
1. *Do not write anything on this question paper.*
2. *Answer question ONE (Compulsory) and any other TWO questions.*

SECTION A. (30 MARKS)
QUESTION ONE

(a) Using diagrams describe the high degree of positive and low degree of negative correlations.   (8marks)

(b) The following data shows the amount of fertilizer applied and the corresponding quantity on production.

Fertilizer: 15, 18, 20, 24,   30,   35,   40,   45.
Production: 85, 93, 95, 105, 120, 130, 150, 160.

Required:
(i). Calculate the coefficient of correlation between use of fertilizer and the production prize.   (10marks)

(ii). Comment on the results above   (2marks)

d) Explain the main properties of correlation   (6marks)

e) State four characteristics of Chi-square test   (4marks)

SECTION B. (30 MARKS)- Answer any TWO questions

(a) Explain the following:
   i) Mean   (2marks)
   ii) the interquartile range   (2marks)
   iii) Median   (2marks)

(b) Describe type **I** and type **II** errors (6marks)
(i) Discuss the key issues in hypothesis testing (8marks)

QUESTION THREE
(a) Distinguish between correlation and regression (10marks)
(b) Explain the uses of the analysis of time series (6marks)
(c) Distinguish between continues and discrete variables. (4marks

QUESTION FOUR

a) What is sampling (2marks)
b) Discuss the following types of sampling
   i. Cluster sample (2marks)
   ii. Stratified sample (2marks)
   iii. Random sample (2marks)
c) Describe four properties of standard normal curve (4marks)
d) The data shows the number of hospitals in nine counties

County	Hospitals
A	5
B	1
C	2
D	1
E	6
F	1
G	5
H	2
I	1

Required:

i. Calculate the mean, mode and the median for the above data
(8marks)

QUESTION FIVE

(a) Define the following:
   i. parameter [2marks]
   ii. statistic [2marks]

(b) Outline four properties of the standard normal curve [4marks]

(c) Using the following information obtain two regression equations.
(12marks)

X	2	4	8	6	7	9
Y	5	4	9	8	9	7