MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF SOCIAL SCIENCES

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION (ARTS)

BACHELOR OF ARTS

AGE 200: QUANTITATIVE AND QUALITATIVE RESEARCH IN GEOGRAPHY

DATE: 6/12/2019 **TIME: 2.00-4.00 PM**

INSTRUCTIONS: Answer QUESTION ONE and any other TWO QUESTIONS

QUESTION ONE (30 MARKS)

a) Discus the following terms

i. Descriptive and inferential statistics (2 marks)

ii. Sample and population (2 marks)

iii. Discrete and continuous variables (2 marks)

iv. Quantitative and qualitative data (4 marks)

b) Discus the rational of statistical data in the contemporary research world. (10 marks)

c) i) what is a hypothesis (2 marks)

ii) Explain the steps of hypothesis testing procedure (8 marks)

QUESTION TWO (20 MARKS)

The table below shows marks obtained by 100 candidates at Eastside research centre.

Class of data	15 -24	25 – 34	35 - 44	45 - 54	55 – 64	65 - 74	75- 84	85- 94
Frequency	6	14	24	14	x	10	6	4

a) Determine the value of x. (2 marks)

b) State the

i. Modal frequency (2 marks)

ii. Median mark (3 marks)

iii. Mean (4 marks)

c) The interquantite range. (9 marks)

QUESTION THREE (20 MARKS)

a) explain the terms

i. Correlation of variables (2 marks)

ii. Regression (2 marks)

b) Explain 3 types of correlation using a diagram. (6 marks)

c) In a beauty competition two assessors were asked to rank 10 contestants using professional skills. The results obtained were given as shown in the table below.

Contestants	1st Assesor	2nd assesor
A	6	5
B	1	3
C	3	4
D	7	6
E	8	7
F	2	1
G	4	8
H	5	2
J	10	9
K	9	10

Required

Calculate the rank correction coefficient and hence comment briefly on the value obtained.

(10 marks)

QUESTION FOUR (20 MARKS)

a) Briefly explain why geographers use "samples" instead of "full populations" in Geographic research. (3 marks)

b) With the aid of suitable illustrations, explain the following sampling techniques.

i. Simple random sampling (6 marks)

ii. Systematic sampling (5 marks)

iii. Stratified random sampling (6 marks)

QUESTION FIVE (20 MARKS)

a) Explain the understanding of the types of distribution

i. normal distribution (3 marks)

ii. binomial distribution (3 marks)

iii. Poisson distribution (3 marks)

b) State three characteristics of Poisson distribution (3 marks)

c) The average number of yearly accidents at a traffic intersection is 7. Determine the probability that there are exactly three accidents at the same intersection in the year (use to be e=2.71828) (4 marks)

d) The probability of changing street lights records a car running a red light, find the probability that exactly 3 cars will run a red light in 20 light changes and the data has binomial distribution (use binomial distribution formulae) (4 marks)

A	6	5	1	1
B	1	3	-2	4
C	3	4	-1	1
D	7	6	1	1
E	8	7	1	1
F	2	1	1	1
G	4	8	-4	16
H	5	2	3	9
J	10	9	+1	1
K	9	10	-1	1

$d^2 = 36$

the rank correlation coefficient R

$$R = 1 \frac{6 \quad d2}{n(n2 \ -1)}$$

$$-1 \quad \frac{6 \ x \ 36}{10(10^2 - 1)}$$

$$= 1 \ \frac{- 216}{990}$$

$$= 1 \ - 0.22$$

$$= 0.78$$