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KIBABII UNIVERSITY

UNIVERSITY EXAMINATION

ACADEMIC YEAR 2022/2023

THIRD YEAR FIRST SEMESTER MAIN EXAMINATIONS

BACHELOR OF EDUCATION ARTS

COURSE CODE: GEO 314

COURSE TITLE: QUANTITATIVE METHODS IN GEOGRAPHY

DATE: 19<sup>TH</sup> DECEMBER, 2022

TIME: 9:00-11:00AM

DURATION: 2HOURS

**INSTRUCTIONS TO CANDIDATES**

ANSWER ALL QUESTIONS IN SECTION (A) AND ANY OTHER TWO QUESTIONS IN SECTION (B)

▶ KIBU OBSERVES ZERO TOLERANCE TO EXAMINATION CHEATING

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Knowledge for Development

### SECTION A (compulsory questions)

1. a. Distinguish between the following terms:
  - i. Variable and parameter (3 marks)
  - ii. Sample and element (3 marks)
- b. Explain any two characteristics of measurements of scale. (4 marks)
- c. Explain, with examples, any three reasons for grouping of data before conducting statistical analysis. (6 marks)
- d. A school provides the following weightage of 10% for class attendance, 30% for continuous assessment test, 35% for final exam, and 25% for home assignments. A student scores 97% for class attendance, 71% in continuous assessment, 90% in final exam, and 88% in home assignments. Calculate the final score of the student. (6 marks)
- e. Briefly describe a normal distribution curve (8 marks)

### SECTION B (Optional Questions)

2. Describe the three forms of skewed distribution and three forms of kurtosis. (20 marks)
3. a. Explain three advantages and two disadvantages of non-probability sampling techniques as compared to probability sampling counterparts. (10 marks)
- b. Describe the steps you would follow to arrive at an unbiased sample of 400 boutique outlets in a survey involving a population of 80,000 boutiques along Mumias – Kanduyi road. (8 marks)
4. a. Describe any three forms of correlation that can be obtained in a statistical study. (9 marks)
- b. The following data shows the number of farmers relative to number of water pans from nine (9) different sub-counties in Kenya.

Sub-County	A	B	C	D	E	F	G	H	I
Number of farmers	12	7	11	19	5	21	3	4	17
Number of water pans	14	3	21	28	6	43	1	12	30

- i) Plot a scatter diagram for the data. (4 marks)

ii) Calculate Pearson's Product Moment Correlation ( $r$ ) and interpret your answer.

(7 marks)

5. a. Highlight the four essential steps followed in hypothesis testing. (4 marks)

b. Explain the two types of errors commonly committed in hypothesis testing and state two ways that can help a researcher avoid such errors (6 marks)

c. In an antimalarial campaign, Drug X was administered to 500 people out of a total of 2000 persons in order to test its usefulness in malaria treatment. The number of fever cases were then observed and recorded as below:

Treatment	Fever	No fever	Total
Drug X	20	480	500
No Drug X	100	1400	1500
Total	120	1880	2000

Perform a Chi-square testing to determine at 95% confidence level whether drug X is effective in treating malaria. (10 marks)

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