



# **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**

**DIPLOMA IN EDUCATION (ARTS)**

**AGE 0203: QUANTITATIVE TECHNIQUES IN GEOGRAPHY**

**DATE:**

**TIME:**

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**INSTRUCTIONS:**

**ANSWER QUESTION ONE AND TWO OTHER QUESTIONS. USE ILLUSTRATIONS WHERE NECESSARY**

**QUESTION ONE (30 MARKS)**

- a) Distinguish between the following:
- i. Ordinal and nominal scale (4 marks)
  - ii. Population and sample (2 marks)
  - iii. Systematic and stratified sampling (4 marks)
  - iv. Data and variable (2 marks)
- b) State the characteristics of a normal distribution curve (4 marks)
- c) Explain four sources of empirical data in geographical studies (4 marks)
- d) State the law of addition and multiplication in probability theory (6 marks)
- e) Assess the role of statistics in geographic research (4 marks)

**QUESTION TWO (20 MARKS)**

- a) Define the terms
- i. Sampling frame (2 marks)
  - ii. Confidence level (2 marks)
- b) Describe the characteristics of the measures of central tendency (6 marks)

- c) Explain the procedure of testing an hypotheses (6 marks)
- d) Describe the use of any two statistical methods of organizing and presenting of geographic data (4 marks)

**QUESTION THREE (20 MARKS)**

- a) Determine the range and standard deviation of the following data: 37, 37, 28, 33, 32, 30, 34 (8 marks)
- b) Assess the importance of calculating range and standard deviation (6 marks)
- c) Use the above data to compute mean and mode (4 marks)
- d) What is the usefulness of mean in data analysis? (2 marks)

**QUESTION FOUR (20 MARKS)**

- a) Assume that you are preparing to carry out a study on a topic of your own:
- i. State two objectives of the study (2 marks)
  - ii. State two hypotheses of the study (2 marks)
- b) Describe the criterial for the selection of a statistical test (6 marks)
- c) Explain the concept of probability in geographical studies (4 marks)
- d) What is the importance of using questionnaire as a method of data collection? (6 marks)

**QUESTION FIVE (20 MARKS)**

- a) Using appropriate illustrations differentiate the following:
- i. Continuous and discrete data (2 marks)
  - ii. Descriptive statistics and inferential statistics (2 marks)
- b) Explain any three probability sampling techniques (9 marks)
- c) Assess the importance of sampling in geographic research (7 marks)