



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF EDUCATION

**DEPARTMENT OF EARLY CHILDHOOD EDUCATION & EDUCATIONAL
COMMUNICATION & TECHNOLOGY**

**SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR
BACHELOR OF EDUCATION**

ECE 209: STATISTICS, TESTS AND MEASUREMENTS

DATE: 26/7/2019

TIME: 2.00-4.00 PM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

QUESTION ONE

- a) Describe each of the different types of test formats that may be used in class tests
(10 marks)
- b) Differentiate between each of the following pairs of terms
- i. Positively skewed and Negatively skewed distributions
 - ii. A sample and a population
 - iii. Inferential and Descriptive statistics
 - iv. An Ogive and a Histogram
 - v. Reliability and Validity of a test (10 marks)
- c) State the scale (level) of measurement and type of variable (continuous or discrete) for each of the following.
- i. The positions of learners in an end of term examinations
 - ii. The scores of form 1 students in a mathematics test
 - iii. Classification of students by hostels of residence
 - iv. Age of workers in a factory
 - v. Classification of granduants into First Cass, Second Class, Pass , Fail. (10 marks)

QUESTION TWO

The data below shows a sample of scores obtained on a Form Two English test:

18, 25, 21, 15, 19, 18, 20, 31, 20, 22, 18, 20, 28, 18, 16, 17, 15, 23, 14, 22.

Compute the following measures of ;

- a) Central tendency
 - i. Mode (2 marks)
 - ii. Median (2 marks)
 - iii. Arithmetic mean. (3 marks)
- b) Measures of Variability
 - i. Range (1 mark)
 - ii. Mean deviation (4 marks)
 - iii. Standard deviation. (4 marks)
- c) Using the results obtained in (a) and (b) above,
 - i. Interpret the distribution of the scores (2 marks)
 - ii. Explain the performance of the students in the subject (2 marks)

QUESTION THREE

- a) Discuss five purposes of tests and measurements as used in a school situation (10 marks)
- b) Explain five factors that influence the selection of item format that a teacher may use in a class test (10 marks)

QUESTION FOUR

- a) State five characteristics of the Normal Curve. (5 marks)
- b) Outline five factors that influence the reliability of a test (5 marks)
- c) Explain how each of the factors in (b) above may influence the reliability of a test (10 marks)

QUESTION FIVE

Explain the difference between the following sets of terms;

- a) Summative and Formative evaluation
- b) Achievement test and performance test
- c) Test-retest and parallel form methods of estimating reliability
- d) Content validity and construct validity
- e) Item Difficulty and Item Discrimination of test items (10 marks)