



# KISII UNIVERSITY

## UNIVERSITY EXAMINATIONS

### FIRST YEAR EXAMINATION FOR THE AWARD OF MASTERS OF EDUCATION DEGREE IN CURRICULUM INSTRUCTION AND MEDIA

FIRST SEMESTER 2023/2024  
[AUGUST-DECEMBER, 2023]

#### EDCI 804: STATISTICAL METHODS IN EDUCATION

**STREAM: Y1 S1**

**TIME: 2 HOURS**

**DAY: THURSDAY, 12.00 – 2.00 P.M.**

**DATE: 23/11/2023**

#### **INSTRUCTIONS**

***1. Do not write anything on this question paper.***

***2. Answer Questions ONE and any other TWO Questions***

1. (a) (i) Enumerate THREE types of errors in measurement (3 marks)  
(ii) What is a variable? Give TWO examples (4 marks)  
(iii) Differentiate between cluster and purposive sampling techniques. (5 marks)

(b) (i) The Teacher marked assignment scores of 20 Kisii university students in EDU801 are as follows:

3, 5, 4, 8, 6, 4, 7, 7, 6, 6,  
5, 7, 6, 8, 5, 4, 7, 3, 5, 6

Calculate

- (i) Range  
(ii) Mode  
(iii) Mean  
(iv) Standard deviation of the scores

(8marks)

- (ii) Explain four laws that you would observe to reduce sampling errors when carrying out research. (4 marks)

- (c) (i) Sketch a graph to show each of the following relationships:
- Positive linear correlation
  - Negative linear correlation
  - No correlation (6marks)
2. (a) (i) Differentiate between frequency polygon and histogram(2marks)  
(ii) Explain the concept of Spearman Rank Order correlation (3marks)
- (b) If the probability that A will be alive in 20 years is 0.7 and the probability that B will be alive in 20 years is 0.5. What is the probability that they will both be alive in 29 years? (5 marks)
- (c) State FIVE measures of dispersion (5 marks)
3. (a) (i) Explain and sketch a hypothetical histogram. (2 marks)  
(ii) List FOUR steps to take in order to plot a histogram(4marks)
- (b) The table below represents the number of Kisii University students that sat for examination on seven courses; construct a pie chart to show the sectional representation of the courses

<b>COURSES</b>	<b>NUMBER OF STUDENTS</b>
EDU723	180
EDU726	200
EDU716	80
EDU722	50
EDU762	90
EDU713	45
EDU724	60

- (9marks)
4. (a) (i) List FIVE types of values taken by correlated variables. (5marks)
- (ii) Write the symbols of these statistical terms:  
(I) Mean (II) Summation of frequency (III) Square root (IV) Variance (2marks)
- (b) Given the scores of three students in EDU 801 as follows: 45, 90 and 75
- (i) Compute the Z-score of each of the scores (7marks)
- (ii) Mention ONE function of Z-score (1 mark)

5. (a) Enumerate FIVE reasons why an education students need the knowledge of Statistics (5 marks)
- (b) (i) Explain inferential statistics (2 marks)
- (ii) Describe THREE processes you would take in order to draw statistical inference (3 marks)
- (c) (i) The Z-score of Hellen's score in statistical method is -1.5. Calculate her T-score. (3 marks)
- (ii) Give ONE advantage of T-score has over Z-score (2 marks)