



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION

SCHOOL OF EDUCATION

COURSE CODE: EDU 821

COURSE TITLE: STATISTICAL METHODS

TIME ALLOWED: 3 HOURS

INSTRUCTION: ANSWER QUESTION ONE(1) AND ANY OTHER THREE(3) QUESTIONS.

1. (a) (i) Enumerate THREE types of errors in measurement. (3 marks)
- (ii) What is a variable? Give TWO examples. (4 marks)
- (ii) Differentiate between cluster and purposive sampling techniques (2 marks)
- (b) (i) The TMA1 scores of 20 NOUN students in EDU 821 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 (6 marks)
- b (ii) List FOUR laws that you would observe to reduce sampling errors when carrying out a research. (4 marks)
- (c) (i) Sketch a graph to show each of the following relationships: (3 marks)
- Positive linear correlation
 - Negative linear correlation
 - No correlation
- (ii) Four groups of ODL students, consisting of 15, 20, 10 and 18 individuals, reported mean weights of 162, 148, 153 and 140 respectively. Find mean weight of all the students. (3 marks)
2. (a) (i) Differentiate between bar chart and histogram (2 marks)
- (ii) Explain the concept of Pearson Product Moment correlation (3 marks)
- (b) Calculate mean of the following set of scores from 100 ODL students using assumed mean method
- | | | | | | |
|-----------|----|----|----|----|----|
| Score | 61 | 64 | 67 | 70 | 73 |
| Frequency | 5 | 18 | 42 | 27 | 8 |
- (5 marks)
- (c) Sketch a graph to represent each of the following:

- Normal curve
- Negative skewness
- Positive skewness
- Mesokurtic
- Leptokurtic

(5 marks)

3. (a) (i) List FOUR types of data you know.
(4 marks)

(ii) Write the symbols of these statistical terms:

I. Mean II. Summation of frequency III. Square root IV. Variance

(2 marks)

- (b) Given the scores of three students in EDU 821 as follows: 45, 90 and 75

(i) Compute the Z-score of each of the scores (7 marks)

(ii) Mention ONE function of Z-score (2 marks)

4. (a) Enumerate FIVE reasons why an educational researcher needs the knowledge of statistics.
(5 marks)

(b) (i) Explain inferential statistics (2 marks)

(ii) List THREE processes you would take in order to draw statistical inference.
(3 marks)

(c) (i) The Z-score of Kunle's score Statistical method is -1.5. Calculate his T-score.
(3 marks)

(ii) Give ONE advantage T-score has over Z-score (2 marks)

5. (a) Enumerate five basic assumptions of data of two variables to be correlated (5 marks)

(b) The table shows how 10 students were ranked according to their achievements in both the laboratory and lecture sections of a Biology course.

Laboratory	8	3	9	2	7	10	4	6	1	5
Lecture	9	5	10	1	8	7	3	4	2	6

(i) Find the coefficient of rank correlation (6 marks)

(ii) Interpret your answer in (i) (2 marks)

(iii) Find the coefficient of determination. (2 marks)

