NATIONAL OPEN UNIVERSITY OF NIGERIA
91, Cadastral Zone, NnamdiAzikwe Expressway, Jabi, Abuja
FACULTY OF EDUCATION
Department of Educational Foundation
2025_2 EXAMINATIONS

COURSE CODE: **EDU821**
COURSE TITLE: **STATISTICAL METHODS**
TIME ALLOWED: **3 HOURS**
INSTRUCTION: **Answer question No. 1(which is compulsory) and any other 3**

Question No.1 (Compulsory)

The scores obtained by 10 students in a mathematics test is given as follow: 40, 50, 80, 60, 30, 25, 90, 75, 40, 60. Transform each student score to standard Z-score.**(25marks)**

Question No. 2

(a) (i)Define the "Range" as a variability score **(2 marks)**
(ii) List 2 shortcomings of the Range as a variability score **(2 marks**)

(b) Explain the terms:
(i) Deviation Score **(3marks)**
(ii) Standard Deviation **(3 marks)**

(c) What 4 properties make the standard deviation a more useful deviation score? **(5 marks)**

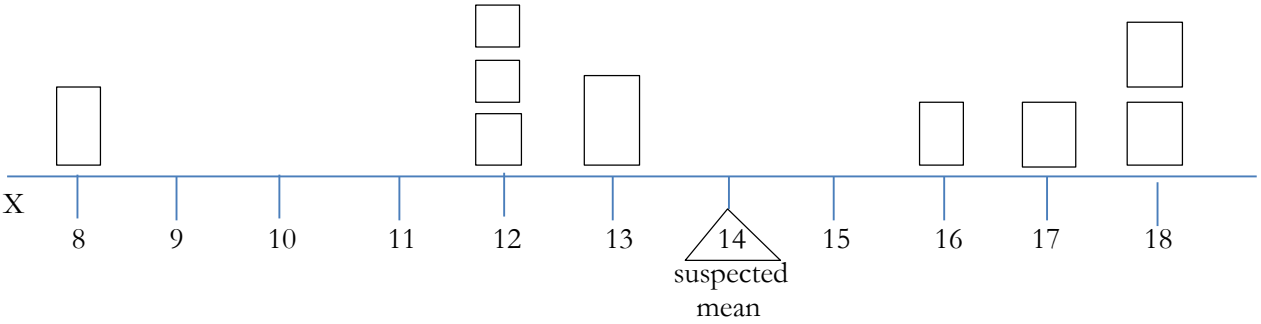
Question No. 3

(a) (i) Define the variance of a distribution of scores
(ii) Why is the standard deviation preferred to the variance in inferential statistics?

(b)Tabulate:
(i)$(X-\bar{X})$,
(ii) $(X-\bar{X})^2$,
(iii)$\bar{X}$
(iv) variance and
(v) standard deviation of the distribution below:
32, 71, 64, 50, 48, 63, 38, 41, 47, 52 **(15marks)**

Question No. 4

In the distribution shown in the figure below;



(a) Change the score "8" to a 2, then recalculate the;
(i) mode
(ii) the median
(iii) the mean
(iv) which of the measures of central tendency was most affected **(7 marks)**

(b) Omit figure 8, and calculate ;
(i) mode
(ii) median
(iii)mean. State the effect on these measures. **(8 marks)**

Question No. 5

Observe the following scores obtained by English Students in a class of 50:
84, 80, 68, 87, 86, 70, 79, 90, 67, 80, 82, 62, 87, 85, 86, 86, 61, 86, 91, 78, 70, 86, 85, 88, 70, 79, 75, 89, 73, 86, 72, 68, 82, 89, 81, 69, 77, 81, 77, 83, 72, 96, 89, 84, 78, 88, 78, 78, 82, 76.

Present the scores in grouped frequency tables using;
(i) class interval width of 5 **(7 marks)**
(ii) class interval width of 3 **(8 marks)**

Question No. 6

(a) Observe the raw scores: 1, 5, 7, and 3;
(i) Determine the mean of the score
(ii) Determine the deviation scores of the distribution.
(iii) What is the meaning or implication of the deviation score derived from the raw score of 7?
(iv) What is the value of the deviation scores? **(15 marks)**