



NATION OPEN UNIVERSITY OF NIGERIA

SCHOOL OF EDUCATION

2024_2 EXAMINATION

Course: EDU821 Educational Statistics Credit Unit: 2

Instruction: Answer question ONE and any other Two questions

Time Allowed: 2 Hours

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1. a. Define the term **statistic** and state **five (5)** importance of statistics in the field of education 6 marks
- b. Differentiate between the following concepts; with examples:
- i. Unimodal distribution and Polymodal distribution 4 marks
 - ii. Direct relationship and inverse relationship 4 marks
 - iii. Parameter and statistic 4 marks
- c. From the distribution of scores of 30 students:
- | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 5 | 0 | 1 | 2 | 2 | 7 | 0 | 6 | 2 |
| 3 | 1 | 4 | 5 | 2 | 1 | 1 | 3 | 2 | 1 |
| 1 | 3 | 4 | 1 | 0 | 4 | 2 | 3 | 0 | 1 |
- i. Construct a frequency distribution for these data 4 marks
 - ii. Construct its bar chart 4 marks
 - iii. Determine the mode and median of the distribution 4 marks
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2. a. Given $X_1 = 2$; $X_2 = 4$; $X_3 = 5$; $X_4 = 6$
Find (i) $\sum_{i=1}^4 x_i$ (ii) $\sum_{i=2}^3 (x_i + 2)$ (iii) $\sum_{i=3}^4 2(x_i)$ (iv) $\sum_{i=1}^3 (x_i)^2$ 8 marks
- b. The table below shows the ages of children in two different compounds in a community:
- i. Find children's mean, median and modal ages in compounds A and B. 9 marks
 - ii. What is the range of ages of children in compounds A 1 mark
 - iii. Where do the youngest and oldest children live 2 marks
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|------------|---|---|---|---|---|---|---|---|---|---|
| Compound A | 4 | 8 | 5 | 7 | 4 | 7 | 6 | 6 | 5 | 6 |
| Compound B | 5 | 6 | 2 | 6 | 4 | 7 | 3 | 5 | 4 | 7 |
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3. a. State the situation in which one can use each of the following statistical techniques:
(i) Mean (ii) Median (iii) T – score (iv) Spearman Rank Correlation 12 marks
- b. In a study of opinion towards Basic Statistics, 100 Education students were asked to indicate their opinion as YES or NO. The following data were collected:
- | | | |
|-----------------|---------|----|
| | Opinion | |
| | Yes | No |
| From the above: | 65 | 35 |
- i. Formulate the null and alternative hypotheses 2 marks
 - ii. Calculate the test statistic 3 marks
 - iii. What is your decision if the critical value at .05 alpha level is 3. 841? 3 marks
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4. Write short notes on any **five** of the following;
- a. Types of variables 4 marks
 - b. Standard score 4 marks
 - c. Scale of measurement 4 marks
 - d. Measure of relative standing 4 marks
 - e. Skew distribution 4 marks
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