

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
EDUCATION (ART/SCIENCE)**

EPSC 123: STATISTICAL METHODS IN EDUCATION

STREAMS: BED (ART&SC.) ODEL

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 07/08/2024

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS

- Answer question one and any other two
- Do not write anything on the question paper

Question one

- a) Briefly explain the following terms as used in educational statistics
 - i Descriptive statistics [2 marks]
 - ii Inferential statistics [2 marks]
 - iii Population [2 marks]
 - iv Sample [2 marks]
 - v Continuous variable [2 marks]
- b) Examine THREE reasons for studying statistics. [6 marks]
- c) Discuss any two factors that influence the correlation coefficient. [4 marks]
- d) Given the following set of scores: 8, 10, 10, 7, 12, 10, 8, 10, 7, 9.
Compute
 - i) Mean [2 marks]
 - ii) Median [2 marks]
 - iii) Standard deviation [3 marks]
 - iv) Quartile deviation [3 marks]

Question two

The data below was obtained from student's mathematics test scores.

35 50 30 18 42 30 60 . 55 60 55
 50 40 45 4-0 38 60 40 35 40 50
 60 48 38 35 59 35 45 35 50 43
 56 45 40 90 72 59 37 20 85 82
 70 69 28 61 64 53 36 48 87 50

- a) Prepare a grouped frequency distribution beginning with class 10-19. [4 marks]
- b) Identify the Modal class [2 marks]
- c) Calculate
 - i. 4th decile [3 marks]
 - ii. 60th percentile [3 marks]
- d) Determine the spearman's rank order correlation coefficient for the values of x and values of y in the table below: [8 marks]

Values of x	1	2	3	5	9
Values of y	6	2	4	10	8

Question Three

- a) An urn contains yellow, green, black and white marbles. The probability of picking any of the marbles is shown in the table below.

Colour	Yellow	Green	Black	White
Probability	0.20	0.15	-----	0.35

- i. What is the probability of picking a yellow or green and black marble?
 - ii. What is the probability of picking a white and yellow and green marble?
 - iii. What is the probability of picking yellow or green and black or white marbles?

[10 marks]
- b) Describe FIVE steps followed in hypothesis testing. [10 marks]

Question Four

- a) Using suitable illustrations, discuss any FOUR methods of presenting data. [12 marks]

- b) An examination taken by statistics students generated a mean of 75.23% and a standard deviation of 5.62.
- i. Determine the Z score for the final score of 80. [3 marks]
 - ii. Determine the final score that is 2 standard deviations below the mean. [2 marks]
- c) In an event of tossing a single coin four times, in how many ways can you get two heads on top. [3 marks]
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