CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF EDUCATION (ARTS)

EPSC 123: STATISTICAL METHODS IN EDUCATION

STREAMS: BED(ARTS) **TIME: 2 HOURS**

DAY/DATE: THURSDAY 06/12/2018 **11.30 A.M – 1.30 P.M**

INSTRUCTIONS

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

1. (a) A student did an examination and scored as follows in various subjects.

English	20 out of 50
Mathematics	15 out of 40
Science	16 out of 20
Kiswahili	20 out of 25

(i) Convert the scores in each subject into percentages. [8 marks]
(ii) Compute the average score of the student. [2 marks]

(b) Distinguish between the following terms as used in statistics.

(i) Qualitative and quantitative data. [4 marks]

(ii) Continuous and discrete variables. [4 marks]

(iii) Population and sample. [4 marks]

(c) The following data represents raw scores for a form one class in mathematics.

27, 31, 43, 29, 56, 74, 30, 40

51, 76, 29, 47, 38, 20, 50, 25

53,56,40, 44, 30, 55, 58, 50

Draw a frequently distribution table using tally markets with class intervals of 1-10 , 11-20 etc. [8 marks]

2. (a) A researcher provided data in the table below;

Class	2-4	5-7	8-10	11-13	14-16	17-19	20-22
Frequency	9	6	15	20	30	15	6

Determine (a) Modal class [1 mark]

(b) Median [5 marks]

(c) Mean [4 marks]

(b) A doctor recorded his observations about variable x and variable y in the table below.

X	1	1	1	3	3	3	5	5	5
Y	2	2	2	5	5	5	8	8	8

(i) Determine the relationship between x and y using the product moment correlation coefficient. [8 marks]

(ii) Interpret the results in (i) above. [2 marks]

3. (a) A bag contains five red balls and seven yellow balls. Without replacement:

(i) Draw a tree diagram showing how two balls are drawn from the bag at a time. [4 marks]

(ii) What is the probability of picking a red ball followed by a yellow ball. [2 marks]

(iii) What is the probability of picking two balls of the same colour. [4 marks]

(b) Explain any five factors that influence the correlation coefficient. [10 marks]

4. Use data in the table below to answer the questions that follow.

Class	11-20	21-30	31-40	41-50	51-60	61-70
Frequency	3	8	6	12	9	4

(a) Compute the range [2 marks]

(b) Calculate tha variance [5 marks]

(c) Find the standard deviation [2 marks]

(d) Determine the upper quartile [5 marks]

(e) Determine the lower quartile [5 marks]

(f) Find the inter quartile range. [1 mark]
