CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF EDUCATION ARTS

EPSC 123: STATISTICAL METHODS IN EDUCATION

STREAMS: B.ED (ARTS) Y2S1   **TIME: 2 HOURS**

DAY/DATE: TUESDAY 06/08/2019   **8.30 A.M. – 10.30 A.M.**

INSTRUCTIONS:
- **Answer question ONE and any TWO others**
- **Do not write on the question paper**

QUESTION ONE (COMPULSORY) (30 MARKS)

1.   (a)   What is the place and significance of the study of statistical methods in education to secondary school teachers in Kenya.   (4 marks)

(b)   Distinguish:

(i)   Parametric and non-parametric statistics
(ii)   Population and sample
(iii)   Descriptive and Inferential statistics   (6 marks)

(c)   Use the table below to answer the following questions

x	20	40	70	80	30	50	60
f	5	6	2	2	10	20	5

(i)   Determine the mean using frequency distribution table above.   (4 marks)

(ii)   Determine modal class   (1 mark)

(iii)   Determine the median   (1 mark)

(iv)   Calculate the variance   (2 marks)

(v)   Calculate the standard deviation   (2 marks)

(d)   The pre test scores (x) and post test scores (y) of four students were recorded in the below. Calculate the product moment linear correlation coefficient.   (10 marks)

Pre test scores (x)	37	41	48	32
Post test scores (y)	75	78	88	80

QUESTION TWO (20 MARKS)

(a)   Describe any five factors that influence the correction coefficient.   (10 marks)

(b)   Determine the rank order correlation coefficient for the values of x and y in the table below.   (10 marks)

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

QUESTION THREE

(a)   Explain any two types of errors that occur in hypothesis testing   (6 marks)

(b)   Differentiate a statistic from a parameter   (4 marks)

(c)   An examination taken by a statistics class generated a mean of 65.8 and a standard deviation of 10.07

     (i)   Determine the z-score of 80   (2 marks)

     (ii)   Determine the z-score of 75   (2 marks)

     (iii)   Determine the final score that lies 2 standard deviations below the mean.   (2 marks)

(d)   A population has a mean and a standard deviation . Compute the Standard scores corresponding to:

     (i)   250   (2 marks)

     (ii)   280   (2 marks)

QUESTION FOUR (20 MARKS)

(a)   Distinguish between continuous variables and discrete variable   (2 marks)

(b)   Using the data below, find the:

      (i)   Mode   (1 mark)
      (ii)   Median   (1 mark)
      (iii)   Mean   (3 marks)
      (iv)   Standard deviation   (2 marks)
      (v)   Variance   (1 mark)

15-19.9	20-24.9	25-29.9	30-34.9	35-39.9	40-44.9
4	16	40	18	6	4

(c)   Determine Q1, Q2 and Q3 from data below   (10 marks)

Class	F(frequency)	Cumulative frequency (cf)
10-14	2	2
15-19	8	10
20-24	6	16
25-29	12	28
30-34	7	35
35-39	6	41
40-44	4	45
45-49	3	48
50-54	1	49
55-59	1	50