CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF POST GRADUATE EDUCATION

PGDE 742: STATISTICAL METHODS IN EDUCATION

STREAMS: PGDE LIB1 SB   **TIME: 2 HOURS**

DAY/DATE: THURSDAY 06/12/2018   **8.30 A.M – 10.30 A.M**

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

1.   (a) Explain the importance of the knowledge of statistical methods in the evaluation of

learners abilities.   [5 marks]

(b) With the aid of a diagram, describe how homoscedasticity affects the correlation

coefficient.   [5 marks]

(c) A teacher tabulated the raw scores of his students as follows:

Class	31-40	41-50	51-60	61-70	71-80	81-90
Cumulative frequency	7	21	30	53	60	70

(i)   Work out the frequencies   [2 marks]

(ii)   Determine the modal class.   [1 mark]

(iii)   Calculate the median mark.   [4 marks]

(iv)   Compute the mean score   [3 marks]

2.   (a) Briefly describe the steps involved in hypothesis testing for a study whose objective is

to determine the effectiveness of computer assisted teaching in changing students attitude

towards mathematics.   [10 marks]

(b) The following information was provided by an educational psychologist who was studying the relationship between the IQ of mothers and their daughters. Use the information to compute the rank order correlation coefficient.   [7 marks]

Mothers 1Q	135	128	125	120	114	110	102	96	90	86
Daughters 1Q	122	130	110	132	110	116	108	89	84	92

(c) An examination taken by candidates in Kenya generated a mean of 72 and a standard deviation of 14.
Determine the standard score for a raw score of 90.   [3 marks]

3.   (a) Use data in the table below to compute the inter quartile range.   [10 marks]

Class	45-49	50-54	55-59	60-64	65-69	70-74
Frequency	3	6	18	10	5	4

(b) Given the critical value as 1.83, test the hypothesis that there is no statistically significant difference between the means of male and female candidates using data in the table below.   [10 marks]

Male	7	6	9	5	8	5	10	6	12	13
Female	8	5	4	2	6	3	7	4	8	9

4.   (a) A die is tossed twice. Find the probability that the sum of the two upper faces will be:

      (i) At least nine   [2 marks]

      (ii) Greater than or equal to four   [2 marks]

(b) Discuss any three characteristics of a linear relationship.   [6 marks]

(c) (i) Determine the equation of a straight line connecting variable x and y given in the table below.   [8 marks]

X	11	14	18	21	13	26	17
Y	20	25	30	34	23	38	28

(ii) Compute the value of Y when X is 76. [2 marks]