EDUC 803

CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

**FIRST YEAR EXAMINATION FOR THE AWARD OF MASTER
OF EDUCATION**

EDUC 803: STATISTICAL METHODS IN EDUCATION

STREAMS: MED   **TIME: 3 HOURS**

DAY/DATE: THURSDAY 05/12/2019   **2.30 P.M. – 5.30 P.M.**

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

1.   (a)   Citing a relevant example, describe the steps involved in hypothesis testing

[10 marks]

(b)   In a study, teachers were asked to indicate their age category. Use data in the table
below to graphically represent the information.   [5 marks]

Age	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70
Frequency	25	44	60	37	14

(c)   Explain five factors that influence correction coefficient   [5 marks]

2.   (a)   Distinguish between the following terms

(i)   Data and variance   [2 marks]

(ii)   Parameter and statistic   [2 marks]

(b)

Class	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 – 44
Frequency	4	16	40	16	8	4

(i)   Determine the mode   [2 marks]

(ii)   Calculate the standard deviation   [6 marks]

(c) Work out the product moment correlation coefficient using data in the table below and interpret the answer   [8 marks]

x	2	3	5	9	7	1	8
y	3	1	7	8	9	2	5

3. (a) Respondents were asked to choose their colour of preference as shown in the table below. Test the hypothesis that the colour preference is independent of gender. ($\propto= 0.05$)   [10 marks]

	Purple	Yellow	Green	Red
Male	22	34	29	55
Female	45	18	25	24

(b) Test the hypothesis at $\propto= 0.05$ that there is no difference in the means of control and experimental groups   [10 marks]

Control	60	70	40	80	70	30
Experimental	30	50	20	60	40	10

4. (a) Highlight two features of t distribution   [2 marks]

(b) Determine the value of y when x is 23   [10 marks]

x	27	33	25	18	28	39	20
y	23	27	36	19	24	30	24

(c) Test the hypothesis that there is no statistically significant difference among the following groups at $\propto= 0.05$ [8 marks]

A	B	C	D
6	5	6	5
7	4	5	5
3	3	4	3
8	4	5	7