(*Knowledge for Development*)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2016/2017 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER

SPECIAL/ SUPPLEMENTARY EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE

MATHEMATICS

COURSE CODE: STA 141

COURSE TITLE: INTRODUCTION TO STATISTICS

DATE: 14/09/17   **TIME:** 11.30 AM -1.30 PM

INSTRUCTIONS TO CANDIDATES

Answer Question One and Any other TWO Questions

TIME: 2 Hours

Question 1 (30 marks)

Consider the set of data below;

20,40,60,80,100. Find:

a) the arithmetic mean   2 mks

b) the geometric mean   4 mks

c) the harmonic mean   4 mks

d) find the mean and variance of 10,20,30,40,50   5 mks

e) multiply each variate by 2 and find the variance   5 mks

Question Two (20 Marks)

a. Explain any three types of data   6 mks

b. Differentiate between primary and secondary sources of data   4 mks

c. Consider the following frequency distribution of 150 bolts.

Weight (gms)	frequency
5.00 – less 5.01	4
5.01 – less 5.02	14
5.02 – less 5.03	25
5.03 – less 5.04	36
5.04 – less 5.05	30
5.05 – less 5.06	22
5.06 – less 5.07	11
5.07 – less 5.08	3
5.08 – less 5.09	1

Calculate:

i) the first and third quartiles   4 mks

ii) the sixth decile   3 mks

iii) the 40th percentile   3 mks

Question Three (20 Marks)

a. Define statistics   3 mks

b. State any seven uses of statistics   7 mks

c. Consider the set data of below

13, 3, 19, 23, 11, 22, 28, 22, 22, 31, 17, 30, 23, 16, 9, 33, 28, 24, 23, 8, 7, 28, 25, 18, 21, 22, 17, 29, 12, 20, 17, 23, 24, 27, 24, 13, 21, 26, 20, 25, 27, 24, 15, 27, 13, 23, 24, 26, 26, 22.

i) construct a frequency distribution from the data using seven class intervals of equal width
                                                                                    5 mks

ii) construct a frequency polygon from the data   5 mks

Question Four (20 Marks)

Given the table below:

x	f
1	1
2	3
4	6
5	10
8	4

a) find the mean of x   4 mks

b) state the mode and the modal frequency   3 mks

c) find the median   3 mks

d) find the standard deviation

6 mks

e) find the coefficient of skewness

4 mks.

Question Five (20 Marks)

Consider the following grouped frequency distribution

class	frequency
80 - < 90	2
90 - < 100	4
100 - < 110	10
110 - < 120	20
120 - < 130	5
130 - < 140	3

a) i) find the mid points of each class and then use the first mid point and divide the results by 10 to find the mean of x.

6 mks

ii) let $A = 115$ and $d = (x-A)/10$. Find the mean of x.

6 mks

iii) find the median of the data

8 mks