MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

FIRST YEAR FIRST SEMESTER EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN AGRIBUSINESS MANAGEMENT WITH INFORMATION TECHNOLOGY

MAIN CAMPUS

AEG 106: INTRODUCTION TO STATISTICS

Date: 6th December, 2016 Time: 12.00 - 3.00pm

INSTRUCTIONS:

- Answer ALL Questions in Section A and any other TWO in Section B.
- Carefully read and follow the instructions contained in the answer booklets

SECTION A

1. (a) Differentiate between the following terms used in statistics

i. Inferential and Descriptive statistics (2 mks)

ii. Sample and Population (2 mks)

(b) State Four characteristics of a good measure of central tendency (2 mks)

(c) Explain any FOUR uses of Statistics (4 mks)

2. Table 1 gives the frequency distribution of the rate of unemployment in a sample of 20 Counties in Kenya in 2014

Frequency Distribution of Unemployment Rate

Unemplyment rate %	Frequency
7.0 - 7.4	2
7.5 - 7.9	4
8.0 - 8.4	5
8.5 - 8.9	4
9.0 - 9.4	3
9.5 - 9.9	2

(a) Calculate the mean (4 mks)

(b) Calculate the median (3 mks)

(c) Calculate the Mode (3 mks)

(d) Calculate the standard deviation (3mks)

(e) Calculate the coefficient of skewness (4 mks)

(f) Comment on the skewness of this distribution (1 mks)

(g) Calculate the coefficient of variation (2 mks)

SECTION B: ANSWER ANY TWO QUESTIONS

3 An urn (vase) contains 10 balls that are exactly alike except that 5 are red, 3 are blue, and 2 are green.

(a)What is the probability that, in picking up a single ball, the ball is

(i) Red ? (1mk)

(ii) Blue? (1 mk)

(iii) Nongreen ? (1 mk)

(iv) Non blue? (1 mk)

(iv) Green or nongreen ? (2 mks)

(v) What are the odds of picking a blue ball? (2 mks)

(b) What is the probability of Picking a second red ball from the urn when a red ball was already obtained on the first pick and not replaced ? (3 mks)

(c) What is probability of picking a red ball on the second pick when the first ball picked was not red and was not replaced? (3 mks)

(c) What is the probability of picking a red ball on the third pick when a red and a nonred ball were obtained on the first two picks and were not replaced (3 mks)

(d) What is the probability of obtaining three red balls from the same urn in 3 picks with replacement? (3 mks)

4. Table 2 gives varied quantities supplied of a commodity, Y, and corresponding prices, X, holding everything else constant.

N	1	2	3	4	5	6	7	8
Y	12	14	10	13	17	12	11	15
X	5	11	7	8	11	7	6	9

(i) Estimate the regression equation Y on X (7 mks)

(ii) Calculate Karl Pearson's Coefficient of correlation from data above (2 mks)

(iii) Interpret the above results (1 mks)

b. The prices of Items A, B,C and D as well as the quantities (in million) consumed during 2014 and 2015 are given in table 3 below

	Price 2014 (Kshs)	Price 2015 (Kshs)	Quantity 2014	Quantity 2015
A	100	120	20	15
B	200	250	40	25
C	130	130	30	50
D	225	250	10	10

i) Calculate Laspeyres price index for 2015 with 2014 as the base year (5 mks)

ii) Calculate Paasches price index for 2015 using 2014 as the base year (5 mks)

5. Table 4 below shows marks of 10 students scored in Statistics and Mathematics

Statistics	56	75	45	71	62	64	58	80	76	62
Mathematics	66	70	40	60	66	56	59	77	67	63

(i) Calculate rank correlation coefficient from data above (13 mks)

(ii) Interpret the above results (2 mks)

(iii) Explain the importance of correlation analysis (5 mks)