MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2018/2019 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER

SCHOOL OF BUSINESS AND ECONOMICS

BACHELOR OF SCIENCE (ECONOMICS)

BACHELOR OF SCIENCE (FINANCIAL ECONOMICS)

BACHELOR OF SCIENCE (ECONOMICS AND STATISTICS)

COURSE CODE: ECO 1105

COURSE TITLE: ECONOMIC STATISTICS I

DATE: 5TH DECEMBER 2018 **TIME: 11.00 -1.00PM**

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE** and any other **THREE** questions

This paper consists of 3 printed pages. Please turn over.

1. QUESTION ONE (25 MARKS)

a) Explain the meaning of each of the following;

i) Statistics (2 marks)
ii) Kurtosis (2 marks)
iii) Box and Whisker plot (2marks)

b) Differentiate between each of the following as applied to statistics:

i. Population and sample (2 marks)
ii. Parameter and statistic (2 marks)
iii. Descriptive statistics and inferential statistics (2 marks)

c) Given the data below

28	35	61	29	48	57	67	69	55	71
48	49	47	42	37	51	72	63	33	62
71	32	35	43	37	66	51	54	56	31
37	76	42	38	59	58	44	39	57	46
38	44	45	45	38	44	47	47	48	22

i) Develop a frequency distribution table of six classes (2 marks)
ii) Construct an ogive (2 marks)

d) Give three main reasons why the use of sample is more widely applied than that of population in the study of statistics (3 marks)
e) Give the four levels of measurement as applied to statistics (2marks)
f) Differentiate between the Chebyshevs rule and the Emperical rule as applied to the understanding of The Standard deviation (4 marks)

QUESTION TWO (15 MARKS)

a) Give three main properties of the arithmetic mean (3 marks)

a) A sample of 50 antique dealers in Narok town revealed the following sales figures during the year 2017

Sales	No. of firms
100 – 120	5
120 – 140	7
140 – 160	9
160 – 180	16
180 – 200	10
200 – 220	13

Required:

Determine :

i) The mean sales (3 marks)

ii) The median sales (3 marks)

iii) The modal sales amount (3 marks)

b) A hospital in Narok employees a total of 200 nurses. Of these, 25 are nurse's aides, 75 are practical nurses and 100 are registered nurses. Nurse's aides receive Ksh. 80 per hour, practical nurses receive Ksh. 100 per hour and registered nurses receive Ksh.140 per hour. Determine the weighted mean hourly wage (3 marks)

QUESTION THREE **(15 MARKS)**

a) Clearly explain three main approaches of data collection (6 marks)

b) Explain each of the following sampling techniques

i) Simple random (3 marks)

ii) Stratified (3 marks)

iii) Systematic (3 marks)

QUESTION FOUR **(15 MARKS)**

a. Below is sample data from a company's figures for a given operations x

41	13	20	13	26	13	45	82	67	37
38	62	36	35	56	35	54	34	34	34
31	41	27	47	50	47	47	51	53	41

You are required to determine

i) The inter quartile range (5 marks)

ii) The 67^{th} percentile (2 marks)

iii) The 6^{th}decile (2 marks)

b) Given the data below;

Amount spent	Frequency
80 – 85	6
85 – 90	12
90 – 95	23
95 – 100	35
100 – 105	24
105 – 110	10

Required:

Determine the

i) the variance (3 marks)

ii) the standard deviation (1 marks)

iii) the coefficient of variation (2 marks)

QUESTION FIVE **(15 MARKS)**

Below are the prices and quantities of five products during the years 2015 and 2016

Item	Price/kg(Ksh) in 2015	Quantity (kg) in 2015	Price/kg(Ksh) in 2016	Quantity(kg) in 2016
X1	24.0	6	26.0	6
X2	32.5	4	35.0	5
X3	15.2	2	15.5	4
X4	17.5	3	20.0	3
X5	40.0	5	45.5	6

Required:

a) Use the data above to develop unweighted aggregate price index for 2016 using 2015 as the base year. (3 marks)

b) Using 2015 as the base year, compute price index number for 2016 using each of the following methods:-

i. Lespeyres (3 marks)
ii. Paasche (3 marks)
iii. Fisher's Ideal (3 marks)

c)Differentiate between Chain Based and Fixed Base index (3 marks)

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