



(Knowledge for Development)

KIBABII UNIVERSITY COLLEGE

**A CONSTITUENT COLLEGE OF MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY**

UNIVERSITY EXAMINATIONS

2014/2015 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER

MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION

COURSE CODE: STA 141

COURSE TITLE: INTRODUCTION TO STATISTICS

DATE: 28/4/15

TIME: 8.00AM -10.00PM

INSTRUCTIONS TO CANDIDATES

Answer Question One in and Any other TWO Questions

TIME: 2 Hours

This Paper Consists of 4 Printed Pages. Please Turn Over.

QUESTION ONE

- a) Define the following terms as used in statistics(4MKS)
- (i) Population
 - (ii) Discrete data
 - (iii) Nominal data
 - (iv) Inferential statistics
- b) State properties of a good measure of central tendency(6 MKS)
- c) The following data is a sample of the accounts received of a small merchandising firm

37	42	44	47	46	50	48	52	90
54	56	55	53	58	59	60	62	57
60	61	62	63	57	64	63	68	92
67	65	66	68	69	66	70	72	35
73	75	74	72	71	76	81	80	40
79	80	78	82	83	85	86	88	38

- (i) Using class interval of 5 i.e 35-39; make a frequency distribution table(4mks)
- (ii) Construct a Stem and Leaf diagram(4mks)
- (iii) Calculate the mean, mode and median from the table in (a), hence comment about the symmetry(12 mks)

QUESTION TWO

Prodco PLC manufactures an item of domestic equipment which requires a number of components which have varied as various modifications of the model have been used. The following table shows the number of components required together with the price over the last three years of production.

COMPONENT	1981		1982		1983	
	Prices	Quantity	Prices	Quantity	Prices	Quantity
A	3.63	3	4.00	2	4.49	2
B	2.11	4	3.10	5	3.26	6
C	10.03	1	10.36	1	12.05	1
D	4.01	7	5.23	6	5.21	5

Required:

Establish the base weighted price indices for 1982 and 1983 based on 1981 for the item of equipment. (8 marks)

Establish the current weighted price indices for 1982 and 1983 based on 1981 for the item of equipment. (8 marks)

Using the results of (a) and (b) as illustrations, compare and contrast Laspeyre's and Paasche price index numbers. (4 marks)

QUESTION THREE

(a) Explain the term Dispersion in Statistics. What purpose does a measure of dispersion serve.

(b) Define the coefficient of variation.

The following table gives profits (in ten thousands of shillings) of two supermarkets over a duration of one year.

Month	Supermarket A	Supermarket B
January	65	28
February	48	33
March	15	20
April	28	23
May	41	69
June	59	45
July	41	53
August	10	15
September	24	35
October	56	57
November	92	99
December	120	136

Required:

Compute the coefficient of variation for each supermarket.
 Indicate for which supermarket the variability of profits is relatively greater.

QUESTION FOUR

- a) In 1995 five firms registered the following economic growth rates; 26%. 32% 41% 18% and 36%.

Calculate the GM for the above values

- b) The economic growth rates of five countries were given as 20%, 15%, 25%, 18% and 5%
 Calculate the harmonic mean
- c) Prove that the harmonic mean is less than equal to geometric mean less than equal to arithmetic mean
- d) Compute the standard deviation for the data below

X	59	61	63	65	67	69	71
	-	-	-	-	-	-	-
	61	63	65	67	69	71	73
F	4	30	45	15	16	7	3

QUESTION FIVE

a) What do you understand by the terms Skewness and Kurtosis? Point out their role in analysis of a frequency distribution.

b) A sample of 15 items has a mean of 3.5 and a standard deviation of 3. Another sample of 26 items has a mean of 4.7 and a standard deviation of 4. Find the mean and standard deviation of the composite sample