



**KIBABII UNIVERSITY COLLEGE**

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*Knowledge for Development*

**2013/2014 ACADEMIC YEAR**

**SEMESTER MAIN EXAMINATION**

**COURSE CODE: STA 141**

**COURSE TITLE: INTRODUCTION TO PROBABILITY**

**DATE: 18<sup>TH</sup> AUGUST, 2014**

**TIME: 9.00 A.M. – 12 NOON**

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**INSTRUCTIONS TO THE CANDIDATES**

**INSTRUCTIONS:-Answer question ONE and TWO questions.**

**SECTION A (30 Marks): COMPULSORY**

- Q1. (i) Define the term statistics in reference to **Types, Classification** and **Uses** of statistics.
- (ii) Distinguish between **Qualitative data** and **Quantitative data**: Give appropriate examples.
- (iii) Define the term Exploratory Data Analysis (EDA) and give five characteristics of EDA
- (iv) Use a **Stem** and **Leaf** display to organize the following set of scores.

86    114    94    107    96    100    98    118  
107    132    106    127    124    108    112    119  
125    114

Explain how a Stem and Leaf display contains more information than a group frequency distribution.

- (v) What do you understand by the terms Skewness and Kurtosis? Point out their role in analysis of a frequency distribution.
- (vi) Explain the term Dispersion in Statistics. What purpose does a measure of dispersion serve.
- (vii) Define Index numbers: Explain different types of index Numbers. State the uses and limitation of index numbers .

- (viii) Find the equation of the regression line and compute the value of the correlation coefficient for the following data.

Income x	80	100	120	140	160	180
Consumption y	325	462	445	707	678	750

**SECTION B: answer any two**

Q2. 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

- (a) Using class interval of 5 i.e 35-39; make a frequency distribution table
- (b) Construct a histogram and frequency polygon
- (c) Calculate the mean, mode and median, hence comment about the symmetry
- (d) Find the 7<sup>th</sup> decile and 37<sup>th</sup> percentiles,

Q3. Calculate the Mean, Mean deviation, 2<sup>nd</sup> moment about the mean and Standard deviation from the following data.

MARKS	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
No of students	5	6	15	10	5	4	2	2

Q4 Construct the Cost of living Index number from the following data:-

GROUPS	WEIGHT	GROUP INDEX NUMBER
Food	47	247
Fuel and lighting	20	293
Clothing	8	289
House Rent	11	100
Miscellaneous	14	236

Q5

The masses of fish caught by fishermen in a day are as shown in the table below

Mass (kg)	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Number of fish	2	6	20	12	10	5	6	2

- a) Compute the first three moments about the mean (9mks)
- b) Calculate Karl Pearson Coefficient of Skewness from the following data