

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

# **UNIVERSITY EXAMINATIONS 2014/2015**

**SECOND YEAR FIRST SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY**

**SMA 2102 : PROBABILITY AND STATISTICS 1**

**DATE: AUGUST 2014 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE**

1. (i) For each of the following statements, answer by use of true or false [5 marks]
2. A permutation is an arrangement of ‘n’ distinct objects without regard to order.
3. Skewness is departure from asymmetry
4. Harmonic mean, geometric mean and arithmetic mean are all measures of the central tendency.
5. Mode is the best average
6. Two events are mutually exclusive if they happen at the same time

**(ii)** Define the following terms using a diagram in each case. [6 marks]

1. Mesokurtic curve
2. Platykurtic curve
3. Leptokurtic curve

(iii) The data below shows marks scored by 30 students in a certain continuous assessment marked out of 50 marks.

12 36 40 30 28 20 19 10 10 16

19 37 15 26 20 19 7 45 33 21

26 27 6 20 11 17 17 30 20 5

1. From the above observations prepare a frequency distribution table starting with the class 5 – 1- for inclusive classes [6 marks]
2. Hence calculate

(i) Coefficient of variation [6 marks]

(ii) Quartile deviation [4 marks]

(iii)Karl Pearsons coefficient of skewness [3 marks]

**QUESTION TWO**

The following marks have been obtained by a group of students in a statistics

examination (out of 100)

Paper 1: 80 45 55 56 58 60 65 68 70 75 85

Paper 2: 82 56 50 48 60 62 64 65 70 74 90

Calculate:

1. The rank correlation coefficient of the marks scored in the two papers and comment on its values. [10 marks]
2. The coefficient of correlation and compare it with the rank correlation [10 marks]

**QUESTION THREE**

1. Primary data is superior to secondary data. Discuss. [10 marks]
2. Discuss five methods of primary data collection. [10 marks]

**QUESTION FOUR**

1. State four properties of a good average [4 marks]
2. Name three methods of data presentation [3 marks]
3. The data below shows the distribution of marks for students in a certain class.

Marks No. of students

0 – 10 5

10 – 20 11

20 – 30 19

30 – 40 21

40 – 50 16

50 – 60 10

60 – 70 8

70 – 80 6

80 – 90 3

90 – 100 1

Calculate

1. The harmonic mean [8 marks]
2. The mode graphically [5 marks]

**QUESTION FIVE**

1. Discuss the approaches to probability [10 marks]
2. What is the application of SPSS and SAS in the field of statistics. [10 marks]