

 W1-2-60-1-6

**JOMO KENYATTA UNIVERSITY**

**OF**

**AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2014/2015**

**YEAR I SEMESTER II SPECIAL/SUPPLEMENTARY EXAMINATIONS FOR THE DEGREE OF BACHELOR OF COMMERCE AND BACHELOR OF BUSINESS INFORMATION TECHNOLOGY**

**HBC 2121: INTRODUCTION TO BUSINESS STATISTICS**

**DATE: AUGUST 2015 TIME: 2 HOURS**

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

**QUESTION ONE**

1. Explain the following terms;
2. Mutually exclusive events
3. Type two error
4. Permutations
5. Quartile deviation
6. Hypothesis [10 marks]
7. There are two vacant positions in a certain company. Ten people, seven men and three women are eligible an equally qualified for the positions. The company had decided to draw 2 names at random from the list of eligible persons.

Calculate the probability that:

1. Both positions will be filled by men [2 marks]
2. Atleast one of the positions will be filled by a woman [2 marks]
3. Neither position will be filled by a man. [2 marks]
4. The mean of three numbers is 15, whilst the mean of these and another two numbers is 28. If one of the latter is 20, what is the other? [4 marks]
5. In how many ways may 12 different coins be placed in 17 envelops, not more than one coin being placed in each? Leave the answer in factorial form. [3 marks]
6. From the data given below calculate the two regression equations of marks in economics and statistics. [7 marks]

Economics (X): 25 28 35 32 31 36 29 38 34 32

Statistics (Y) : 43 46 49 41 36 32 31 30 33 39

**QUESTION TWO**

1. Describe FIVE disadvantages of using interviews as a method of primary data collection. [10 marks]
2. On the basis of the figures recorded below, for supply and price for nine years, build a regression of price on supply, and from the equation established calculate the most likely price when supply is 90. [10 marks]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| YEAR | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| SUPPY | 80 | 82 | 86 | 91 | 83 | 85 | 89 | 96 | 93 |
| PRICE | 145 | 140 | 130 | 124 | 133 | 127 | 120 | 110 | 116 |

**QUESTION THREE**

1. In the frequency distribution of 100 families given below, the number of families corresponding to expenditure groups 20 – 40 and 60 – 80 are missing from the table. However, the median is known to be 50. Find the missing frequencies, and hence the arithmetic mean. [10 marks]

Expenditure (dollars): 0-20 20 – 40 40 – 60 60 – 80 80 – 100

No. of families : 14 - 26 - 16

1. Describe FIVE advantages of using questionnaires as a method of data collection. [10 marks]

**QUESTION FOUR**

Below are given the figures of production (in thousand tonnes) of a sugar factory:

Year 1983 1984 1985 1986 1987 1988 1989

Production 80 90 92 83 94 99 92

(in ‘000’ tonnes)

1. Fit a straight line trend to these figures. [7 marks]
2. Plot these figures on a graph and show the trend line [3 marks]
3. Explain FIVE demerits of using secondary data for data collection. [10 marks]

**QUESTION FIVE**

1. What are the components of the time series? [4 marks]
2. State FOUR disadvantages of the mode [4 marks]
3. State TWO reasons why the arithmetic mean is frequently used. [2 marks]
4. Use the data below to answer the following questions;

Central size: 2.5 7.5 12.5 17.5 22.5

Frequency: 7 18 25 30 20

**Calculate:**

1. The median [4 marks]
2. The coefficient of variation [6 marks]