

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

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2018/2019

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF PROCUREMENT AND CONTRACT MANAGEMENT/BACHELOR OF SUPPLY CHAIN MANAGEMENT**

**HPS 2205: QUANTITATIVE TECHNIQUES I**

**DATE: APRIL 2019 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER**

**TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Work out:

(i) A + B [2 marks]

(ii) A x B [4 marks]

(b) Define a hypothesis and then explain the different types of hypothesis. [6 marks]

(c) Given the following figure

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sample A | 1 | 2 | 3 | 5 | 6 |  |  |
| B | 6 | 3 | 4 | 2 | 1 | 8 | 9 |
| C | 4 | 2 | 3 | 6 |  |  |  |

**Required:**

(i) Calculate the mean of each sample. [6 marks]

(ii) Calculate the grand mean. [2 marks]

(d) Discuss any three methods used in data collection. [4 marks]

(e) Odhiambo kept Sh. 25,000 in a bank account. The interest payable per annum was 25%. If he kept it for 3 years, calculate:

(i) Using simple interest the amount payable at the end of the three years.

[3 marks]

(ii) What would be the increase in interest if the money was on compound interest?

[3 marks]

**QUESTION TWO (20 MARKS)**

(a) Given the following sets A = {1 2 4 6 8 9}, B = {2 6 8 9 12), C = {7,5} show:

(i) A n B [2 marks]

(ii) (A u B) [2 marks]

(iii) A1 [2 marks]

(b) Differentiate:

(i) Y = +4+6x [2 marks]

(ii) Y = 2 3 [4 marks]

(c) State and explain any four different types of matrices. [8 marks]

**QUESTION THREE (20 MARKS)**

The following information are for a company regarding sales attained in a year in tones:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Month | Jan | Feb | March | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec |
| Sales | 140 | 150 | 160 | 130 | 120 | 190 | 210 | 250 | 240 | 260 | 280 | 300 |

**Required:**

(i) Work out a three month moving average. [10 marks]

(ii) Draw two graphs:

(a) For the original sales. [5 marks]

(b) As shown by the moving average. [5 marks]

**QUESTION FOUR (20 MARKS)**

(a) Discuss the characteristics of a good measure. [10 marks]

(b) Differentiate between a geometric mean and a harmonic mean. [4 marks]

(c) Discuss the various measures of dispersion. [6 marks]

**QUESTION FIVE (20 MARKS)**

(a) Differentiate between an open and a closed system. [4 marks]

(b) The following figures were extracted from to industries A and B:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | To |  |  |  |
| From | A | B | Final Demand | Total Output |
| A | 400,000 | 200,000 | X | 1,300,000 |
| B | 500,000 | Y | 600 | 1,500,000 |

Primary input 400,000 900,000

**Required:**

(i) Give the values for X and Y. [4 marks]

(ii) If the final demand for A and B increases by 10% and 20% respectively,

calculate the new total output. [12 marks]