

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

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2018/2019**

**YEAR IV SEMESTER I EXAMINATION FOR THE DEGREE OF BACHELOR OF PROCUREMENT CONTRACT MANAGEMENT/SUPPLY CHAIN MANAGEMENT**

**HPS 2205: QUANTITATIVE METHODS**

**DATE: AUGUST 2019 TIME: 2 HOURS**

**INSTRUCTIONS: Answer question one and any other two.**

QUESTION ONE

a. Describe five methods of collecting primary data. (10 marks)

b. From the following information construct a bar chart. (10 marks)

|  |  |
| --- | --- |
| Product | Sales (shs 000) |
| A | 200 |
| B | 150 |
| C | 100 |
| D | 150 |

c. The following are the monthly earnings of 10 employees:

 Shs1000, 1200, 1300, 1100, 1090, 1010, 1500, 1000, 1900, 1700, 2000.

 Calculate the average wages or arithmetic mean of

 a. Direct method. (5 marks)

 b. Short cut method. (5 marks)

QUESTION TWO

a. Calculate the harmonic mean from the following data:

 1,2,4,5,8,19,10. (10 marks)

b. Calculate the geometric mean of the following data 130, 135, 140, 145, 146, 148, 149, 150, 157. (10 marks)

QUESTION THREE

a. Calculate the mean deviation (M.D) and its co-efficient.

 in tonnes (shs) 3000, 4000, 4200, 4400, 4600, 4800, 5800. (12 marks)

b. Describe five advantages and disadvantages geometric mean. (5 marks)

c. Write short notes on the following:

 i. Histori grams

 ii. Z- charts

 iii. Cattergraphs. (3 marks)

QUESTION FOUR

Calculate the standard deviation from the following data. (20 marks)

192, 286, 236, 229, 184, 260, 348, 291, 330, 242.

QUESTION FIVE

a. Draw a graph of time series from the following data. (10 marks)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Years  | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Sales (sh 000) | 820 | 950 | 1000 | 950 | 900 | 1050 |

b. i. List five types of averages. (5 marks)

 ii. List five qualities of a good average. (5 marks)