



# TECHNICAL UNIVERSITY OF MOMBASA

## SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

### SOCIAL SCIENCES

#### UNIVERSITY EXAMINATION FOR:

DCDC Y1S2

BAC 2103: BUSINESS STATISTICS

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE: 10 May 2016**

#### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

#### SECTION A COMPULSORY

a) Define the following concepts:

- i) Statistics
- ii) Variable
- iii) Data

**(6 Marks)**

b) Explain any FOUR functions of statistics

**(8 Marks)**

c) The mean and standard deviation of 100 observations was found to be 40 and 5 respectively. Later, it was discovered that an observation of 50 was misread as 40. Find the correct mean and variance.

**(6 Marks)**

d)

Weight	No. Of students
51	1
52	2

53	3
54	5
55	7
56	12
57	16
58	10
59	4
60	5

Required:

Using the above data, calculate:

i) Standard deviation **(5 Marks)**

ii) Variance **(5 Marks)**

## SECTION B: ANSWER ANY TWO QUESTIONS

### QUESTION TWO

a) Explain any FIVE characteristics of a good average **(10 Marks)**

b) Consider the following marks obtained by 60 students in a statistics exam:

Marks	Frequency
0 – 20	5
20 – 40	15
40 – 60	25
60 – 80	10
80 – 100	5

Construct a cumulative frequency curve and graphically locate the median.

**(10 Marks)**

### QUESTION THREE

Determine the variance and standard deviation from the following series:

Class	Frequency
10-20	2
20-30	5
30-40	8
40-50	6
50-60	5
60-70	3
70-80	1

**(10 Marks)**

b) 3 students test results are as follows:

Juma: 10, 9,9,10,6,8,10,10

Jane: 9,7,9,9,9,9,10,10

Jerry: 10, 10,10,10,9,9,10,4

If on the basis of consistency of performance, the school board awarded Jerry a price, would it be justified?  
**(10 Marks)**

### QUESTION FOUR

a) Examine any THREE merits of a scatter diagram

**(6 Marks)**

b) Define skewness and explain different types of skewness

**(4 Marks)**

c) A newly appointed sales executive requested the sales manager to provide her with more enhanced budget. To justify her claim, she provided the following information:

Advertising Expenses (Ksh '000')	Sales Volume (Ksh '000')
1	2
2	5

3	7
4	8
5	9
6	11

Compute the Karl Pearson correlation coefficient 'r'; based on the value is the sales executive request justified?

**(10 Marks)**

**QUESTION FIVE**

a) b) Explain any FIVE characteristics of a good measure of Central Tendency. **(10 Marks)**

b) The tourist industry conducted a research on whether there exists any relationship between the number of leopards in Tsavo and the income generated. The results are as shown:

No. Of leopards	Income(£)
44	670
19	650
37	720
11	620
30	650
51	750

Required:

i) Determine the regression equation **(7 Marks)**

ii) Estimate the income when there are 60 leopards. **(3 Marks)**