



MERU UNIVERSITY COLLEGE OF SCIENCE & TECHNOLOGY

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University Examinations 2011/2012

FIRST YEAR, FIRST SEMESTER EXAMINATIONS FOR DIPLOMA/CERTIFICATE IN BUSINESS
ADMINISTRATION/DIPLOMA IN PURCHASING AND SUPPLIES MANAGEMENT

HDC 0102: INTRODUCTION TO BUSINESS STATISTICS

DATE: AUGUST 2011

TIME: 1½ HOURS

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

QUESTION ONE – (30 MARKS)

(a) Define the following terms

- (i) Statistics (2 Marks)
- (ii) Population (2 Marks)
- (iii) Correlation coefficient (2 Marks)
- (iv) Index number (2 Marks)

(b) The frequency Table 1 shows the measurements of plants in centimeters, taken from 30 plants in a forest.

Table 1

| Classes | Frequency |
|---------|-----------|
| 60-64 | 4 |
| 65-69 | 8 |
| 70-79 | 8 |
| 80-89 | 2 |
| 90-94 | 3 |

Using a suitable scale, draw a histogram to represent this information. (5 Marks)

(c) Table 2 shows the masses, in kilograms of 30 people.

Table 2

| Class, Kg | Frequency |
|-----------|-----------|
| 60-64 | 4 |
| 65-69 | 6 |
| 70-74 | 8 |
| 75-79 | 7 |
| 80-84 | 3 |
| 85-89 | 2 |

(i) State the modal frequency (1 Mark)

(ii) Estimate the following

I. Mean (4 Marks)

II. Median (5 Marks)

(d) In an agricultural centre, the lengths of a sample of 50 maize cobs were measured and recorded as shown in Table 3.

Table 3

| Length, cm | No. of cobs |
|------------|-------------|
| 8-10 | 4 |
| 11-13 | 7 |
| 14-16 | 11 |
| 17-19 | 15 |
| 20-22 | 8 |
| 23-25 | 5 |

Using information in Table 3 calculate:

(i) Variance (5 Marks)

(ii) Standard deviation (2 Marks)

QUESTION TWO – (20 MARKS)

(a) Distinguish between discrete and continuous variables. (4 Marks)

(b) Table 4 represents the masses, in kilograms, of 30 goats selected at random from ranch.

Table 4

| Class | Frequency |
|-------|-----------|
| 15-18 | 4 |
| 19-22 | 5 |
| 23-26 | 14 |
| 27-30 | 7 |

(i) Draw a histogram to represent the data. (10 Marks)

(ii) On the same axes in (i) above draw a frequency polygon. (6 Marks)

QUESTION THREE – (20 MARKS)

(a) The mean height of 12 boys is 152cm. What is their total height? (5 Marks)

(b) Table 6 shows the heights of 50 pupils in a certain primary school.

Table 6

| Height (cm) | 105-109 | 110-114 | 115-119 | 120-124 | 125-129 | 130-134 | 135-139 |
|-------------|---------|---------|---------|---------|---------|---------|---------|
| frequency | 3 | 5 | 8 | 12 | 14 | 5 | 3 |

Using 122 as the assumed mean calculate variance. (15 Marks)

QUESTION FOUR – (20 MARKS)

(a) Define the following terms

(i) Scattergram (2 Marks)

(ii) Raw data (2 Marks)

(b) Find the mean of the distribution in Table 8 by using 110.5 as the assumed mean.

(16 Marks)

Table 8

| | | | | | | |
|-----------|---------|---------|---------|---------|---------|---------|
| Class | 101-104 | 105-108 | 109-112 | 113-116 | 117-120 | 121-124 |
| frequency | 2 | 16 | 41 | 30 | 8 | 3 |

QUESTION FIVE – (20 MARKS)

(a) (i) Define time series

(2 Marks)

(ii) Table 10 shows the price index numbers of food for 2008 with 2005 as the base year.

Table 10

| Commodity | Weight | Relative Price |
|-----------------------|--------|----------------|
| Maize and maize meal | 5 | 187 |
| Wheat flour | 2 | 125 |
| Rice | 2 | 130 |
| Beef | 4 | 175 |
| Milk and butter | 3 | 110 |
| Chicken and eggs | 2 | 150 |
| Tea, coffee, cocoa | 1 | 113 |
| Sugar | 3 | 176 |
| Fruits and vegetables | 2 | 130 |
| Cooking fat and oils | 3 | 160 |
| Cereals | 3 | 118 |

Calculate the retail price index.

(8 Marks)

(b) Table 11 shows the marks scored by 90 students in a Mathematics test. Find the median mark.

(10 Marks)

Table 11

| | | | | | | | |
|-----------|-----|-------|-------|-------|-------|-------|-------|
| Class | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 |
| frequency | 2 | 13 | 31 | 23 | 14 | 5 | 2 |