# **TECHNICAL UNIVERSITY OF MOMBASA** SCHOOL OF BUSINESS DEPARTMENT OF MANAGEMENT SCIENCE

DIPLOMA IN PROCUREMENT AND MATERIALS MANAGEMENT DIPLOMA IN LOGISTICS AND TRANSPORT MANAGEMENT DIPLOMA IN HUMAN RESOURCES MANAGEMENT DIPLOMA IN BUSINESS ADMINSTRATION DIPLOMA IN BUSINESS MANAGEMENT DIPLOMA IN ACCOUNTANCY DIPLOMA IN SALES AND MARKETING

#### **BAC2103: BUSINESS STATISTICS**

END OF SEMISTER EXAMINATIONS

SERIES: MAY 2016

TIME: 2HOURS

#### **INSTRUCTIONS**

This paper contains **FIVE** questions .Answer question **ONE** (**COMPULSORY**) and any other **TWO** questions

#### PART A

#### **QUESTION ONE (Compulsory)**

During the testing of access time to computer program, the following data was obtained.

| Access time (milliseconds) | Cumulative frequency |
|----------------------------|----------------------|
| 30 but less than 35        | 17                   |
| 35but less than 40         | 41                   |
| 40 but less than45         | 60                   |
| 45 but less than 50        | 88                   |
| 50 but less than 55        | 107                  |
| 55 but less than 60        | 120                  |

### Required:

| a) | The mean access time of the program.   | (8 marks) |
|----|--|-----------|
| b) | Standard deviation of the access time. | (6 marks) |
| c) | Coefficient of variation               | (6 marks) |
| d) | Coefficient of skewedness              | (6 marks) |
| e) | State the qualities of a good average  | (4 marks) |

#### **QUESTION TWO**

The following figures (£ 10m) give the turnover and profit before taxation for a company:

| Turnover | 106 | 125 | 147 | 167 | 187 | 220 |
|----------|-----|-----|-----|-----|-----|-----|
| Profit   | 10  | 12  | 16  | 17  | 18  | 22  |

Required:

- a) Find regression equation of profit on turnover. (8 marks)
- b) Using the regression equation, estimate profit where the turnover is:

i. 95

(3 marks)

| ii.  | 258                                | (3 marks) |
|------|------------------------------------|-----------|
| c) D | efine the following types of data: |           |
| i.   | Continuous data                    | (2 marks) |
| ii.  | Primary data                       | (2 marks) |
| iii. | Secondary data                     | (2 marks) |

## **QUESTION THREE**

- a) Discuss four considerations for constructing index numbers, (8 marks)
- b) Consider following the data below,

|         | 2013     |          | 2014     |          |
|---------|----------|----------|----------|----------|
| Product | Price(£) | Quantity | Price(£) | Quantity |
| Α       | 8        | 20       | 10       | 24       |
| В       | 12       | 16       | 14       | 24       |
| С       | 20       | 10       | 24       | 8        |
| D       | 6        | 6        | 8        | 3        |

Compute:

| i) Laspeyre's price index | (4 marks) |
|---------------------------|-----------|
| ii) Paasche's price index | (4 marks) |
| iii) Fisher's price index | (4 marks) |

## **QUESTION FOUR**

a) The following data shows a frequency distribution of heights of workers working in a chemical plant.

| Heights(inches) | 64.5-66.5 | 66.5-68.5 | 68.5-70.5 | 70.5-72.5 | 72.5-74.5 |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| Number of       | 1         | 4         | 9         | 4         | 2         |
| employee        |           |           |           |           |           |

i. Draw an ogive to represent the data

(9 marks)

| ii.  | Us    | e the graph to estimate the lower and upper quartile. Hence evaluate the |            |
|------|-------|--|------------|
|      | int   | erquartile range.  | (6 marks)  |
| b) W | Vrite | brief notes on the following sampling techniques:                        |            |
|      | i.    | Stratified sampling  | (2 marks)  |
|      | ii.   | Systematic sampling  | (2 marks)  |
| i    | iii.  | Simple random sampling   | (1 m arks) |

## **QUESTION FIVE**

The following table gives the number of people in a country and their share of the national wealth.

| Number of people in thousands | Wealth in thousands of shillings |
|-------------------------------|----------------------------------|
| 13,000                        | 5,200                            |
| 16,000                        | 12,800                           |
| 16,000                        | 48,000                           |
| 2,000                         | 50,000                           |
| 500                           | 25,000                           |
| 47,500                        | 141,000                          |

Required:

| a) | Lorenz curve to represent the data | (17 marks) |
|----|------------------------------------|------------|
| b) | Interpret the distribution         | (3 marks)  |