Instructions

- This examination is of **One-hour** duration.

- There are two parts to the question paper. Part *A* consists of 10 multiple choice questions. Each correct answer is given 5 marks. Part *B* consists of a structured essay question. Fifty (50) marks are allocated for this question distributed as indicated.

- Answer **All** questions. At the end of the examination, handover Part *A* with correct answers underlined along with the answers to Part *B*.

- Write down then registration number in each page of the answer script.

Part A

Underline the most suitable answer from the choices given.

1. Which of the following is appropriate to compare the dispersions of data collected on two quantitative variables that were measured **in different units**?
   a) mean absolute deviation
   b) range
   c) coefficient of variation
   d) all of the above

2. Which of the following is appropriate to summarise nominal data?
   a) cumulative frequency plot
   b) frequency polygon
   c) stem and leaf plot

d) none of the above

3. Which of the following graph is not suitable for examining the dispersion of quantitative data?
   a) Stem and leaf plot
   b) bar chart
   c) Histogram
   d) all of the above graphs are suitable

4. The smallest value, largest value and the sample mean of 50 observations that follow a negatively skewed distribution are 21 and 90 and 52.3 respectively. What is the most probable value for the median of this data?
   a) 26
   b) 52
   c) 67
   d) 89

5. The 10th, 25th and 75th percentiles of a set of data are 23, 57 and 71 respectively. What is the most probable value for the median of this data?
   a) 21
   b) 28
   c) 50
   d) 62

6. The first, second and third quartiles of a set of data are 32, 39 and 73 respectively. What is the likely shape of the distribution of this data?
   a) positively skewed
   b) negatively skewed
   c) symmetric
   d) given information is not adequate to decide

7. Which of the following graph is suitable for examining whether the data possibly have come from two populations with different means rather than from a single population?
   a) Box plot
   b) Frequency polygon
   c) Bar chart
   d) None of the above graphs

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8. Which of the following is true for a relative cumulative frequency table?
   a) Sum of all the relative cumulative frequencies is equal to one.
   b) Relative cumulative frequency corresponding to a class interval gives the proportion of observations in the sample falling into that interval.
   c) Information in the table can be graphically represented using a histogram.
   d) none of the above statements is true.

9. Ten observations arranged in **ascending order** are 12, 16, 18, 24, 37, 42, 51, x, 72 and 83. Possible values for x and the cumulative frequency corresponding to x are respectively:
   a) 48 and 200
   b) 48 and 255
   c) 55 and 200
   d) 55 and 255

10. The smallest and largest dried weights (in mg) and the first quartile for a sample of 60 dried weights are 11, 71 and 23 respectively. After computation of descriptive measures, it was realized that the smallest observation had a recording error and must be corrected as 17. The descriptive measures were recalculated after this correction. Identify the measure(s) that will not change.
    a) range
    b) inter-quartile range
    c) coefficient of variation
    d) all the above measures will change.

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Part *B*

1. The following summary table was constructed from the dried weights (mg) in a sample, measured to the nearest first decimal.

dried weight (mg)	frequency
6.0 – 6.9	4
7.0 – 7.9	8
8.0 – 8.9	12
9.0 – 9.9	23
10.0 – 10.9	20

i) Find the class width used to construct the given table.

(5 marks)

ii) Calculate the first quartile of the data.

(10 marks)

iii) calculate the second quartile of the data.

(10 marks)

iv) Out of the two measures calculated in part (iii) and part (iv), which measure would you recommend as a measure of central tendency for this data. Give reasons for your answer.

(15 marks)

vi) Suggest a suitable graph that is appropriate to graphically illustrate the data presented in the table. **You do not have to construct the graph.**

(10 marks)