



**Professional Qualification in**  
**COMPUTING AND INFORMATION SYSTEMS**  
**Level 4 Diploma**

**UNIT 4 – INFORMATION PRESENTATION AND ANALYSIS**

**Question 1**

- (a) Write a definition for standard deviation. (2 marks)  
(b) Describe the use of standard deviation in sample distributions. (4 marks)  
(c) A farmer made a daily count of wild birds in her field:

|        |   |    |    |    |    |    |    |
|--------|---|----|----|----|----|----|----|
| Week 1 | 1 | 7  | 12 | 15 | 20 | 22 | 28 |
| Week 2 | 1 | 15 | 15 | 15 | 15 | 16 | 28 |

Compare the standard deviation for Week 1 with the standard deviation for Week 2.  
(4 marks)

**Question 2**

- (a) State the function of the mode average. (2 marks)  
Eight friends in Harare compare their marks in an ABMA Level 5 computing exam:

| Name       | Mark |
|------------|------|
| Winston    | 41   |
| Chipo      | 86   |
| Kazembe    | 79   |
| Sithembiso | 60   |
| Kirsty     | 68   |
| Beatrice   | 55   |
| Thandeka   | 51   |
| Joel       | 36   |

- (b) Calculate the mean average of their marks. (4 marks)  
(c) Calculate the median average of their marks. (4 marks)

**Question 3**

Use examples to compare and contrast discrete and continuous probability distributions.  
(10 marks)

**Question 4**

Use an example to illustrate how statistical modelling can be used to make predictions.  
(10 marks)

### Question 5

- (a) Describe ONE advantage and ONE disadvantage of presenting data in a tabular form. (5 marks)
- (b) Describe ONE advantage and ONE disadvantage of presenting data as a pictograph. (5 marks)

### Question 6

An umbrella vendor kept a daily record of how many umbrellas they sold over a 10-day period. They also noted the rainfall for each day. The results are below:

|                |   |    |    |    |    |   |    |    |    |    |
|----------------|---|----|----|----|----|---|----|----|----|----|
| Day            | 1 | 2  | 3  | 4  | 5  | 6 | 7  | 8  | 9  | 10 |
| Umbrellas sold | 5 | 15 | 33 | 49 | 22 | 1 | 38 | 19 | 27 | 41 |
| Rainfall (mm)  | 1 | 3  | 5  | 8  | 6  | 0 | 9  | 4  | 6  | 8  |

Plot a scatter gram and accurately draw the line of best fit. (10 marks)

### Question 7

- (a) Discuss the usage of pie charts in reporting statistical data. (5 marks)
- (b) Discuss the usage of histograms in reporting statistical data. (5 marks)

### Question 8

State what is meant by each of the following statistical terms:

- (a) Skew. (2 marks)
- (b) Average. (2 marks)
- (c) Kurtosis. (2 marks)
- (d) Distribution. (2 marks)
- (e) Variance. (2 marks)

### Question 9

- (a) State what is meant by discrete data (2 marks)
- (b) A survey was conducted in Yaoundé of 100 people aged 18 or over to discover how many held a Diploma. The results were:

|                     |       |       |       |       |             |
|---------------------|-------|-------|-------|-------|-------------|
| Age                 | 18-25 | 26-35 | 36-45 | 46-55 | 56 and over |
| Number with Diploma | 6     | 12    | 11    | 9     | 4           |

Draw a discrete bar chart of the data (8 marks)

### Question 10

- (a) State ONE advantage and ONE disadvantage of using personal interviews for research. (5 marks)
- (b) Use an example to illustrate how to determine an appropriate research method. (5 marks)