



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

**UNIT 4 – INFORMATION PRESENTATION AND ANALYSIS**

**Question 1**

- (a) Use an example to explain why a population is often sampled for statistical analysis. (5 marks)
- (b) Describe the hazards and limitations of using a statistical sample. (5 marks)

**Question 2**

- (a) In a sample, describe the mean average and write the general formula. (5 marks)
- (b) In a sample, describe the range and write the general formula. (5 marks)

**Question 3**

- (a) Explain why statistical methods of analysis are used in almost all areas of life. (5 marks)
- (b) Describe ONE example of how statistical methods can benefit medical research. (5 marks)

**Question 4**

The City of Lilongwe conducted a survey to find out how many people held a Level 5 ABMA qualification or higher. In a random sample of 2 000 residents aged 21 years or older, 40 said they did. The city has approximately 700 000 residents aged 21 years or older. Use statistical inference to calculate approximately how many residents could be expected to have a Level 5 ABMA qualification or higher. (10 marks)

### Question 5

On one day the Il Gigante pizza restaurant sold 140 pizzas. The sales were recorded by topping:

Italian sausage	pepperoni	meat feast	vegetarian
25	50	30	35

**Draw** a pictograph to illustrate this data. Use the following symbols:

 is equivalent to 10 pizzas  
(10 marks)

 is equivalent to 5 pizzas

### Question 6

- (a) Explain how a scattergram can be used to illustrate data. (5 marks)
- (b) Describe ONE difference between a bar chart and a histogram. (5 marks)

### Question 7

- (a) Explain why the median is a better measure of central tendency in a skewed distribution than the mean. (5 marks)
- (b) Describe the impact of outliers on the mean as a measure of central tendency. (5 marks)

### Question 8

- (a) Illustrate ONE difference between valid and invalid data. (5 marks)
- (b) Illustrate ONE difference between continuous and discrete data. (5 marks)

### Question 9

- (a) Describe ONE thing wrong with this survey question on people's leisure activities:

How much television do you watch?

Rarely watch television ☐ 0 to 10 hours a week ☐ 10 hours a week or more ☐ Only at the weekends ☐

(5 marks)

### Question 10

- (a) Describe ONE difference between an online survey and a physical survey. (5 marks)
- (b) Describe ONE advantage of conducting a survey online instead of physically. (5 marks)