**QUESTION 1 [6 marks]**

1. You are interested in comparing two variables in your dataset. Which graphical chart would you choose to use? Explain the reason for the selection of this graphical chart. Construct the chart and describe what you can observe.  **3 marks**

(b) Which graphical technique or chart should be used if the researcher is interested in describing the **proportion** of one categorical variable in your data? Explain the reason for the selection of this graphical chart. Construct the chart and describe what you can observe about the proportion. **3 marks**

**QUESTION 2 [6 marks]**

A researcher wishes to use a frequency histogram to display the data.

1. Consider one column with a numerical variable in your dataset. How many observations do you have in this column? Decide on the suitable number of classes for your data set and calculate the class width (show how you have calculated the class width). **3 marks**

**QUESTION 3 [6 marks]**

The researcher wishes to use numerical descriptive measures to summarise the data.

1. Prepare a numerical summary report for one variable in your data set by including summary measures such as mean, median, variance, standard deviation, smallest value, largest value and the three quartiles, for your selected variable. **4 marks**
2. Comment on the descriptive statistics. **2 marks**

**QUESTION 4 [7 marks]**

Select two quantitative variables in your dataset and find out if there is a linear relationship between these two variables.

a). Using Excel, construct a scatterplot to determine the direction of the relationship. Also, include the linear regression equation and the coefficient of determination. **3 marks**

b). Write the equation of the regression line and interpret its slope in the context of your study. **2 marks**

c). Using Excel, calculate the correlation coefficient and interpret the result. Are both variables moving in the same direction? **2 marks**

**QUESTION 5 [5 marks]**

Write a short statistical report. In your statistical report include:

* Description of your data set **1 mark**
* Statistical results obtained in Excel. (descriptive statistics, tables or figures supporting your conclusions) **2 marks**