NAME:

STUDENT ID/GROUP:

INDIVIDUAL ASSIGNMENT

QUESTION 1

Using appropriate SAS code:

A study was conducted with vegetarians to see whether the number of grams of protein each ate per day was related to diastolic blood pressure. The data are shown below.

Protein	4	6.5	5	5.5	8	10	9	8.2	10.5
Blood Pressure	73	79	83	82	84	92	88	86	95

i) Compute the value of correlation coefficient.

ii) Interpret the meaning of the value obtained in i).

iii) Test the significance of the correlation coefficient at $\alpha = 0.05$.

QUESTION

HINT: Using appropriate SAS code to answer the questions

A researcher studied on petrol usage (in liters) for 14 cars travelling from town A to town B in a month. The data collected is shown below:

81 80 65 105 144 75 150 96 91 68 135 134 95 124

a) Find the first quartile, median, and third quartile.

b) Construct a box-and-whiskers plot for the above data.

c) Determine the shape of the data distribution based on the box-and-whiskers plot.

QUESTION

Use appropriate SAS code,

A researcher desires to know whether the typing speed of a secretary (in words per minute) is related to the time (in hours) that it takes the secretary to learn to use a new word processing program. The data are shown as follows:

Speed	48	74	52	79	83	56	85	63	88	74	90	92
Time	7	4	8	3.5	2	6	2.3	5	2.1	4.5	1.9	1.5

a) Obtain the estimated regression function and interpret the meaning of slope.

b) Test the significance of the model using 5% level of significance.

c) Compute the coefficient of determination. Explain the value obtained.

d) Estimate the time it will take for the average secretary who has a typing speed of 72 words per minute to learn the word processing program. Hence, obtain a 95% prediction interval of the time taken.

QUESTION

HINT: Using appropriate SAS code to answer the questions

Fifteen local bakery chefs have been assigned to give ratings to three desserts. The following table shows the data which consists of the rating on 10-point Likert scale for each different dessert.

Dessert P	Dessert Q	Dessert R
7	2	10
8	4	8
7	3	9
7	5	7
6	4	6

Given the correction factor, $CF = 576.6$.

a) Construct a complete analysis of variance table.

b) Test the effect of desserts on the rating. Use $\alpha = 0.05$.

c) Estimate the overall mean.

d) Use Tukey's test to determine which pair mean of desserts have significant different. Use $\alpha = 0.05$.

e) Find a 95% confidence interval for the mean difference of dessert P and dessert R. Interpret the interval obtained.