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Daffodil International University

Department of Software Engineering
Faculty of Science & Information Technology
Midterm Examination, Summer 2025
Course Code: STA 101; Course Title: Statistics I
Section & Teachers: TBN (42_A-42_D,42_J); AS (42_E-42_H); TK (42_I)

Time: 1 Hour 30 Minutes **Marks: 25**

Answer All Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

		Marks	CLOs
1.	Identify the correct data type (quantitative or qualitative). Indicate whether quantitative data are continuous or discrete along with the correct level of measurements. i. The number of browser tabs you have open while working ii. The operating system (OS) you use on your PC iii. The daily temperature (°C) in your city iv. The number of unread emails in your inbox v. The time (in minutes) it takes you to commute to campus	5	[CLO1, C2]
2.	Below are the number of minutes of 30 Software Engineering students reported spending on programming practice in a week:	3+2=5	[CLO2, C3]

20	25	28	30	33	35	36	38	40	41
43	45	46	48	50	53	55	58	60	63
65	66	68	70	73	75	76	78	78	79

a) Construct a frequency distribution table with cumulative and relative frequency.
b) Calculate the **mean and median** number of programming minutes.

3.	The following data represents the number of books read by 15 students in a month: 3, 5, 7, 4, 6, 8, 10, 12, 6, 5, 9, 4, 7, 11, 13 a) Calculate the five-number summary of the dataset. (Minimum, Q1, Median, Q3, Maximum). Draw a Box and Whisker Plot using the five-number summary. b) Calculate the following measures of dispersion: Variance, Standard Deviation, and Coefficient of Variation (C.V.) and comments on the findings.	4+4=8	[CLO2, C3]
4.	The following data shows the number of hours studied (X) and the marks obtained (Y) by 10 students in a statistics quiz:	3+4=7	[CLO3, C3]

Hours Studied (X):	2	4	3	5	4	6	5	7	3	6
Marks Obtained (Y):	50	55	52	60	58	62	61	65	54	63

a) Using the "Marks Obtained" data, calculate the Skewness and Kurtosis coefficients. Based on your results, interpret the distribution shape and comment on student performance variation. (N.B. $\mu_2 = 22.8$, $\mu_3 = -25.2$, $\mu_4 = 910.8$)
b) Draw a scatter diagram using above data and calculate the Pearson's correlation coefficient between hours studied and marks obtained. Interpret the strength and direction of the relationship in the context of academic performance.

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