



Daffodil International University

Department of Computer Science and Engineering (CSE)

Faculty of Science and Information Technology (FSIT)

Final Examination, Semester: Summer 2017

Course Code: STA 133 Course Title: Statistics and Probability

Section: ALL

Course Teacher: ALL

Time: 2.0 hrs

Full Marks: 40

Answer any three of the following questions including question # 1:

1. a. The following table shows, for a sample of towns in Great Britanis, the number of solicitors and number of car stolen last week

6+7

Number of solicitors	12	7	11	19	5	21
Number of stolen car	14	3	21	18	6	42

- i) Is there any correlation between number of solicitors and stolen car? Justify your answer by graphically and mathematically. Interpret your result.
 - ii) Determine the regression model. Interpret your result.
- b. The Quality Control department of Plainsville Peanut Company is responsible for checking the weight of the 8-ounce jar of peanut butter. The weights of a sample of 6 jars produced last hour are: 7.69, 7.80, 7.86, 7.90, 8.09, and 8.11. Find the coefficient of skewness and interpret the result for this sample. 4
- c. The probability of raining Tuesday is 0.07. If today is Tuesday the find the probability of rain is today. 3
2. a. The following values are the starting salaries, (in thousands), for a sample of five CSE graduates who accepted positions in IT officer last year. 4
- 36, 26, 33, 28, and 31. Calculate range and standard deviation.
- b. The accompanying contingency table gives frequencies for a classification of the equipment used in a manufacturing plant. 2+1+1+2

	Equipment use			
Working status	Low	Moderate	High	Total
In working order	10	18	12	40
Under repair	2	6	8	16
Total	12	24	20	56

- i. If a piece of equipment is using low, what is the probability that it is in under repair item?
- ii. Find the probably that the selected equipment is in working order status and highly used
- iii. What is the probability that the randomly selected equipment is in working order?
- iv. Are working status and equipment use status independent events? Justify your answer.

3. a. If the independent probabilities that two people A and B will be alive in 30 years time are 0.4 and 0.3, calculate the probability that in 30 years' time

- i. Both will alive ii. At least one will alive iii. None will alive

b The rock group Blue String Beans is touring the United States. The following tables shows concert seating capacity and revenue in \$000 for a sample of concerts.

Concert seating capacity	56	68	60	58	65
Revenue	2	6	4	3	5

Calculate standard error.

4. a. The net incomes of a sample of large importers of antiques were organized into the following table:

Net Income (\$ millions)	Number of Importers
2 up to 6	1
6 up to 10	4
10 up to 14	10
14 up to 18	3

Calculate the 2nd quartile, 4th decile and P₈₅.

b. Define different types of kurtosis. Write down the difference between correlation and regression.