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Daffodil International University

Department of Computer Science and Engineering

Statistics and Probability (STA101), Fall 2025

ID: **Section:** **Date:**

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1) A test has scores that follow a normal distribution with a mean of 62 and a standard deviation of 7. What percentage of students score higher than 67? [$P(Z < 0.714) = 0.762$].

2) A bookstore sells an average of 2 rare books per day. What is the probability that exactly 8 rare books are sold in the next week?

3) A bookstore sells an average of 2 rare books per day. What is the probability that next book will be sold in 2 days?

4) If the probability a randomly chosen fan buys a hotdog is 0.4 and the probability, they buy a burger is 0.3, what is the probability they buy either a hotdog or a hamburger?

5) A bakery sells chocolate muffins. The probability that a customer chooses a chocolate muffin is 0.45. The probability that it is sunny on a given day is 0.6. Are the events independent?

6) A fair die is rolled 8 times. Probability of getting even number is X/1000 (X is the last 3 digits of your student ID). Find expected even number and its standard deviation.

7) A school reports that 40% of its students play sports. Among the students who play sports, 70% pass their fitness test. If a randomly selected student plays sports, what is the probability that this student passed the fitness test?

8) What type of error (i) A smoke detector fails to sound even though there is a fire. and (ii) A medical test says a patient has a disease, but the patient is actually healthy.

9) You have 10 numbers in a box. What is the probability that you get an even number in first and second draw(without replacement)?

10) Tabulated value is $t = 1.845$ for a one-sample mean test. What will be your decision if calculated value is (i) 1.728 and (ii) 1.875?