Daffodil International University

Department of Electrical and Electronic Engineering
Faculty of Engineering

Mid Term Examination, Spring – 2026

Course Code: 0542 221 | Course Title: Probability and Statistics
Section: A,B,C,D,E | Level-Term: L2-T2 | Teacher's Initial: JA
Full Marks: 25 | Exam Date: Feb 25, 2026 | Time: 1.5 Hours

*** ***Answer all of the following questions sequentially.***

[The figures in the right-hand margin indicate marks allocated for that question.]
[COs represent learning outcomes of the course.]
[All the symbols carry their usual meaning.]

Q1. **Explain** Statistics and provide suitable example where statistical analysis is useful in EEE. **CO-1** **5**
Compare between qualitative and quantitative variable with example. **C(2)**
Identify each of the following variables "type" and "level of measurements",

i) Component ID
ii) Electrical insulation
iii) Current flow
iv) Motor efficiency level

Q2. Two electric motors are tested for their torque output (in Nm) over six trials. The recorded results are: **CO-3** **7** **C(3)**

Motor X	40	55	65	50	70	85
Motor Y	60	72	68	75	80	90

i) **Compute** the average time for each motor?
ii) **Identify** which motor has more consistent power output by applying the most appropriate statistical method.

Q3. In an Electrical Power Lab, current values (in amperes, A) were recorded for 12 circuits: **CO-3** **13** **C(3)**

12	9	15	8	17	28	14	11	10	13	26	16

i) **Identify** D_4, P_{70} and interpret the results.
ii) **Construct** Box-whisker plot from the above data.
iii) **Discover** the shape characteristics of the distribution and select the outliers if have any.
iv) **Choose** the best measure of central tendency in this case.