



# Daffodil International University

## Department of Computer Science and Engineering

Faculty of Science & Information Technology

Midterm Examination, Fall 2022

Course Code: CSE132

Course Title: Electrical Circuits

Level: 2

Term: 1

Batch: 60

Time: 1:30 Hrs

Full Marks: 25

Answer all the following Three questions  
[All portions of each question must be answered sequentially]

|     |    |                                                                                                                                              |            |     |
|-----|----|----------------------------------------------------------------------------------------------------------------------------------------------|------------|-----|
| Q1. | a. | Define a Branch in an electrical circuit.                                                                                                    | 5x1<br>=5  | CO1 |
|     | b. | Show the DC and AC current in time domain.                                                                                                   |            |     |
|     | c. | Recall the name of few active electrical elements.                                                                                           |            |     |
|     | d. | Show the electrical quantities of a short circuit.                                                                                           |            |     |
|     | e. | What do you mean by the Voltage Divider Rule (VDR)?                                                                                          |            |     |
| Q2. | a. | Explain each step and derive the general equation of Current Divider Rule (CDR).                                                             | 2x5<br>=10 | CO2 |
|     | b. | There are different resistances in a motherboard circuit. Explain each step and find out the equivalent resistance of the following circuit. |            |     |
|     |    |                                                                                                                                              |            |     |
| Q3. | a. | Using Nodal Analysis, solve the following circuit to find out the node voltages.                                                             | 2x5<br>=10 | CO3 |
|     |    |                                                                                                                                              |            |     |
|     | b. | Using Mesh Analysis, solve the following circuit to find out the loop currents.                                                              |            |     |
|     |    |                                                                                                                                              |            |     |