Daffodil International University

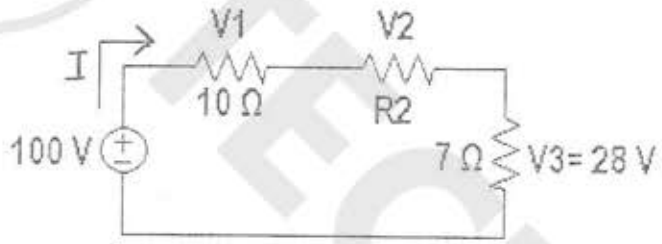
Department of Computer Science and Engineering
Faculty of Science and Information Technology
Final Examination, Semester: Fall - 2019

Course Code: CSE 132 | Course Title: Electrical Circuits
Section: All | Course Teacher: All

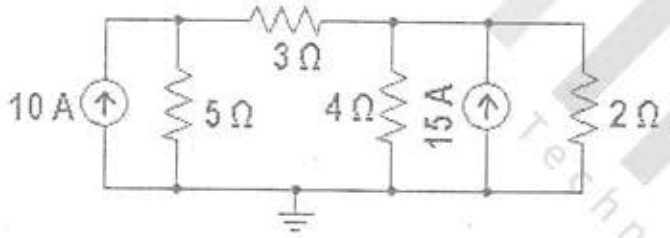
Time: 2 Hours | Full Marks: 40

Answer all the questions

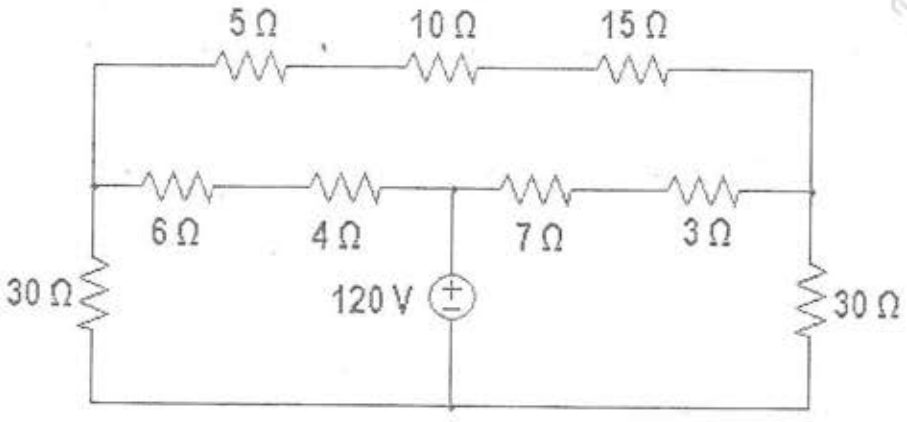
1.a. Determine I, V_1, V_2, R_2 for the following circuit. 5



1.b. Applying Nodal analysis, find out the node voltages for the following circuit. 5



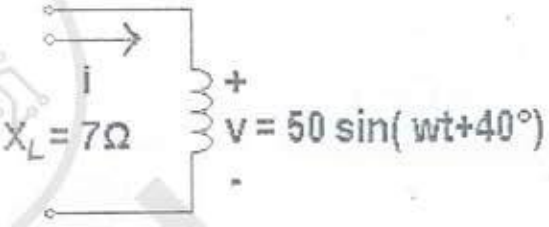
2.a. Applying Mesh analysis, determine loop currents for the following circuit. 5



2.b. The current through a 10-Ω resistor is given, $i = 20 \sin (377t+45°)$. Find the sinusoidal expression for the voltage. Sketch the v and i curves. 5

3.a. What is power factor? For a pure inductive circuit, determine the phase difference between voltage and current. 5

3.b. Find the current i for the following circuit. Sketch the v and i curves. 5



4.a. Prove that Average power, $P = V_{rms} I_{rms} \cos\theta$. Also, determine average power for purely resistive, purely inductive and purely capacitive network. 5

4.b. The current through a 120 μF capacitor is given, $i = 70 \sin (500t+30°)$. Find the sinusoidal expression for the voltage across the capacitor. Also, sketch the v and i curves. 5