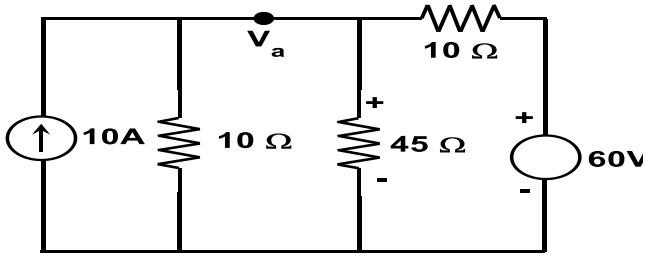
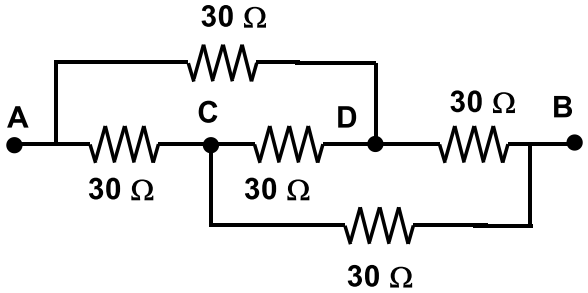
AUTUMN REPEAT MID-SEMESTER EXAMINATION-2022
School of Electrical Engineering
Kalinga Institute of Industrial Technology

1st Semester

Subject: Basic Electrical Engineering (EE 10002)

Time: 1.5 hours **Full Marks: 20**

Answer any FOUR questions including question No.1 which is compulsory.
The figures in the right-hand side indicate full marks.
All parts of a question should be answered at one place only.

Question No	Question	CO Mapping	Marks
Q1.	Answer the following questions.		[1x5]
a	Define Unilateral and Bilateral Network.	1	
b	Define Kirchhoff's current and voltage law.	1	
c	Distinguish between Loop and Mesh in a DC circuit?	1	
d	Two resistors of 8 Ω and 12 Ω are connected in parallel. If the total current is 60 A. Find the current through each resistor.	1	
e	An alternating voltage is given by V = 100 sin 314t volts. Its average value will be ?	2	
Q.2	State and Explain the Superposition Theorem with neat diagram?	1	[5]
Q.3	An alternating voltage having an RMS value of 60 V varying sinusoidally having a frequency of 50 Hz. Write the equation for the instantaneous value of voltage and find its value at 0.025 second. Find its value at 0.0125 second after passing through its positive maximum value.	1	[5]
Q.4	For the circuit shown in figure below, find V_a using the node voltage method. Calculate power consumed by the different resistances. 	1	[5]
Q.5	Calculate the equivalent resistance between the terminal A and B in the network shown in Figure below. 	1	[5]