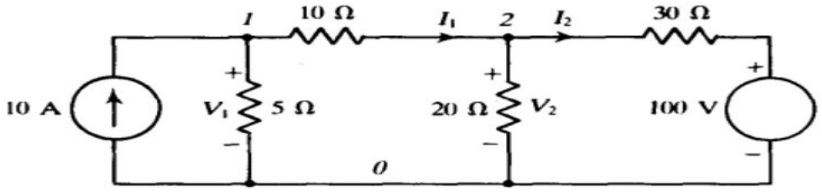
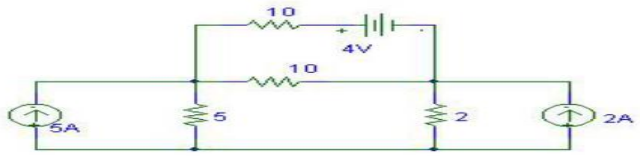
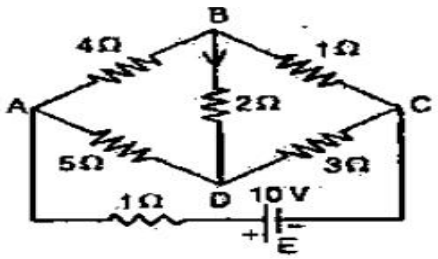
AUTUMN REPEAT MID-SEMESTER EXAMINATION-2022
School of Electrical Engineering
Kalinga Institute of Industrial Technology
1st Semester
Subject: Basic Electrical Engineering (EE 10002)

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 linear and Non-linear Network.	1	
b	Define Kirchhoff's current and voltage law.	1	
c	Define Time Period and Cycle in a sinusoidal waveform.	2	
d	If 3 resistances of each 30 Ω are connected in star. Find the delta resistances.	1	
e	An alternating voltage is given by V = 100 sin 314t volts. Its rms value will be ?	2	
Q.2	Solve for the current in the 5 Ω resistor of the network by superposition Theorem? 	1	[5]
Q.3	Solve for the current through the 2 ohm resistor using Nodal analysis? 	1	[5]
Q.4	Determine the total current delivered by the battery using Delta-star conversion? 	1	[5]
Q.5	An alternating voltage having an RMS value of 100 V varying sinusoidally having a frequency of 60 Hz. Write the equation for the instantaneous value of voltage and find its value at 0.02 second. Find its value at 0.012 second after passing through its positive maximum value.	2	[5]