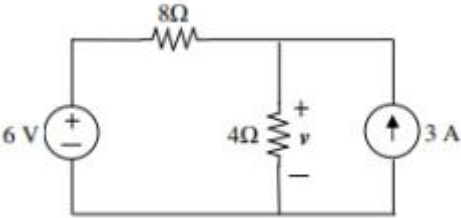
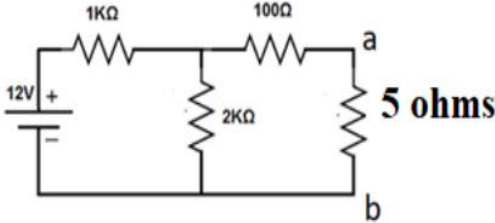
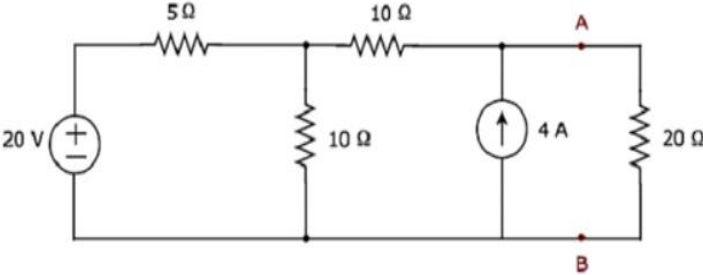
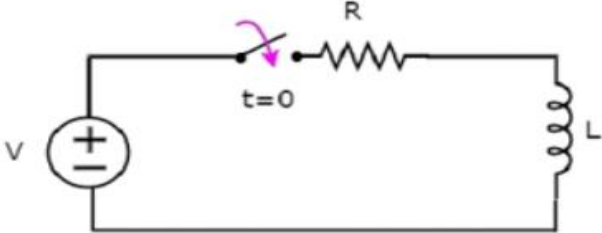
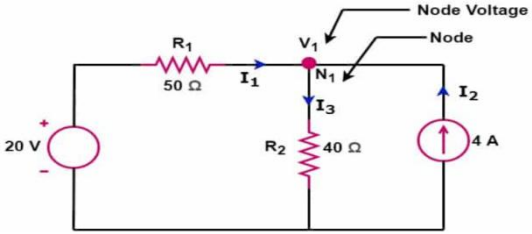


UNIT-1

D.C. Circuits

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	Define charge, voltage, current, power and circuit.	BT2	CO1	PO1
2	State Ohm's law?	BT1	CO1	PO1
3	State Kirchhoff's current law (KCL).	BT2	CO1	PO1
4	State Kirchhoff's voltage law (KVL).	BT2	CO1	PO1
5	Distinguish between a mesh and loop of a circuit.	BT3	CO1	PO2
6	State Thevenin's theorem.	BT3	CO1	PO2
7	State Norton's theorem.	BT2	CO1	PO2
8	State Superposition theorem.	BT2	CO1	PO1
9	What is the difference between linear circuit and non linear circuit?	BT2	CO1	PO2
10	What are the limitations of Ohm's law?	BT3	CO1	PO1
Part – B (Long Answer Questions)				
11	a) Three resistors: $R_1=5\Omega$, $R_2=10\Omega$, $R_3=15\Omega$ are connected in parallel across a DC voltage source: 100V. Find the currents I_1 , I_2 , I_3 through R_1 , R_2 , R_3 and the total current supplied by 100V source?	BT3	CO1	PO2
	b) Discuss resistor, inductor and capacitor with relevant expressions?	BT2	CO1	PO2
12	a) State and explain superposition theorem.			
	b) Using superposition theorem find the current passing through 4Ω resistor	BT4	CO1	PO2
				
13	a) State and explain Thevenin's theorem?	BT3	CO1	PO2
	b) Using Thevenin's theorem calculate the current in 5Ω resistor?	BT2	CO1	PO2

					
14	a)	State and explain Norton's theorem?	BT3	CO1	PO2
	b)	Using Norton's theorem calculate I_N , R_N & Current through 20Ω resistor?	BT3	CO1	PO3
					
15	a)	Explain the time domain analysis of 1st order series RL circuit?	BT2	CO1	PO2
		<p>A Series RL circuit with $R = 30\Omega$ and $L=15H$ has a constant voltage of $V = 60V$ applied at $t = 0$. Determine the current i, the Voltage across resistor V_R & Voltage across inductor V_L.</p> 			
16	a)	State and explain Kirchhoff's laws?	BT2	CO1	PO2
	b)	Explain Ohm's law with limitations?	BT2	CO1	PO2
17)	(a)	What is time constant? Explain the time domain analysis of first order series RC circuit.			
	b)	A Series RC circuit with $R = 10\Omega$ and $C=0.1F$ has a constant voltage of $V = 20V$ applied at $t = 0$. Determine the current i , the Voltage across resistor V_R & Voltage across Capacitor V_C .			
18	a)	Find the current in 40Ω resistor using KCL/ nodal analysis			

					
	b)	Write about the difference between Voltage source & Current source?	BT3	CO1	PO2
19	a)	Find the current through 1Ω resistor using Mesh analysis			

