Off-Campus Centre of Nitte (Deemed to be University)

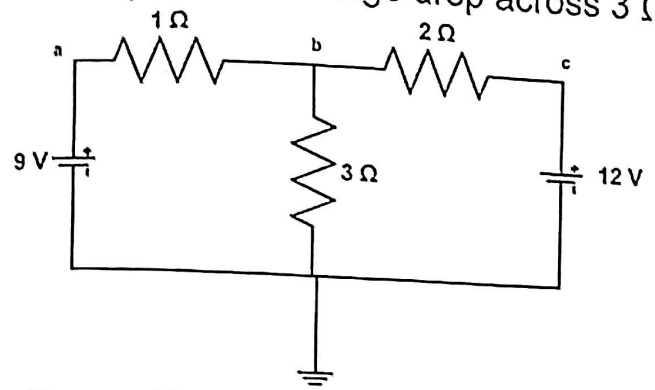
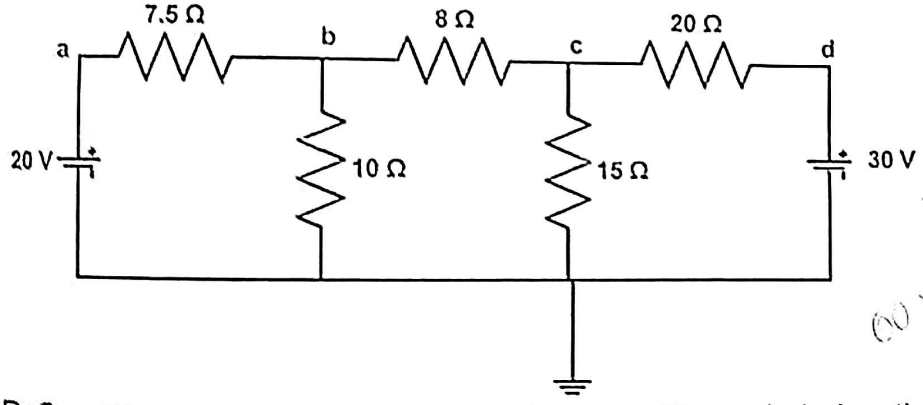
I Sem B.Tech. (CBCS) Mid Semester Examinations - I, September 2022

EE1001-1 – BASIC ELECTRICAL ENGINEERING

Duration: 1 Hour

Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

			Marks	BT*	CO*	PO*
		Unit – I				
1.	a)	Using mesh analysis, find voltage drop across 3 Ω resistor. 	5	L*1	1	1,2
	b)	Define (i) Power Factor (ii) form factor (iii) peak factor (iv) frequency (v) phase.	5	L1	1	1,2
2.	a)	Using Nodal analysis, find V_{bc}. 	5	L1	1	1,2
	b)	Define RMS value of an alternating quantity and derive the expression for the same.	5	L1	1	1,2
		Unit – II				
3.	a)	Show that the power consumed in pure inductance circuit is zero. Draw the current, voltage and power waveform.	5	L1	2	1,2
	b)	A 318 μF capacitor is connected across a 230 V, 50 Hz system. Find (i) the capacitive reactance (ii) RMS value of current and (iii) equations for voltage and current.	5	L1	2	1,2
4.	a)	Show that the power consumed in pure capacitance circuit is zero. Draw the current, voltage and power waveform.	5	L1	2	1,2
	b)	A coil having a resistance of 10 Ω and an inductance of 35 mH is connected to 230 V, 50 Hz supply. Calculate (i) the impedance and the circuit current (ii) phase angle (iii) power factor (iv) power consumed.	5	L1	2	1,2

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome

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