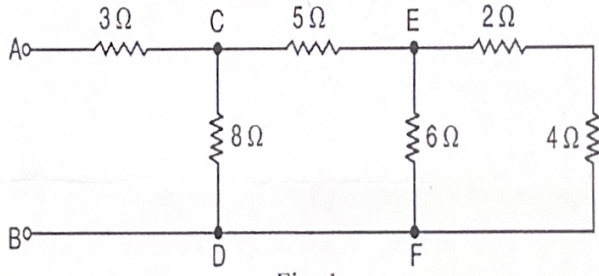
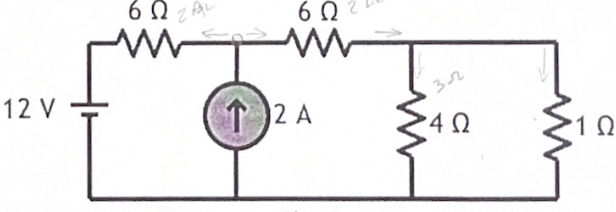


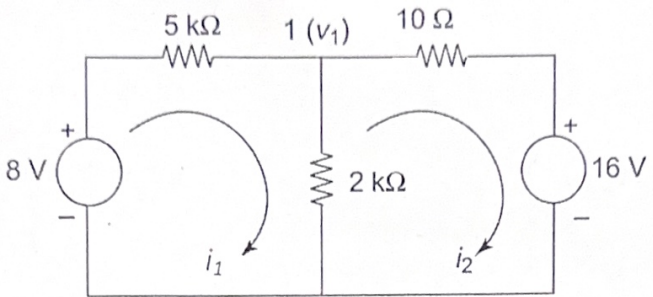


Continuous Assessment Test (CAT) – I - FEB 2024

Programme	:	BAI, BCE, BCL, BDS, BEC, BEE, BLC, BME, BMH, BMV, BPS, BRS, MTI	Semester	:	Weekend Intra 2023- 24
Course Code & Course Title	:	BEEE102L-Basic Electrical and Electronics Engineering	Class Number	:	CH2023240503677 CH2023240503746
Faculty	:	Dr. Aravind C K	Slot	:	Y11+Y12+Y21
Duration	:	90 minutes	Max. Mark	:	50

Answer all questions

Q. No	Sub Sec.	Description	Marks
1	(i)	Write equations to transform star-connected elements to delta and vice versa	4
	(ii)	<p>If a battery having an e.m.f. of 24 volts and internal resistance of $1\ \Omega$ is connected to terminals A and B, find the current from the battery and the potential drop across each resistor.</p>  <p style="text-align: center;">Fig. 1</p>	6
2		<p>Find the current flowing through the $1\ \Omega$ resistor using Thevenin's theorem.</p>  <p style="text-align: center;">Fig. 2</p>	10
3		Determine the node voltage v_1 , and loop currents i_1 and i_2 of the circuit shown in Fig. 3 by (a) nodal method, and (b) by mesh method.	10

		 <p style="text-align: center;">Fig.3</p>	
4	(i)	A series AC circuit containing an inductor (20 mH), a capacitor (120 μ F), and a resistor (60 Ω) is driven by an AC source of 24 V/50 Hz. Calculate the energy dissipated in the circuit in 60 seconds.	5
	(ii)	Explain the importance of earthing in electrical installations. How does it reduce the risk of electric shock?	5
5		<p>A 230 V, 50 Hz a.c. supply is applied to a coil of 0.06 H inductance and 2.5 Ω resistance connected in series with a 6.8 μF capacitor. Calculate</p> <ul style="list-style-type: none"> (i) the total impedance of the circuit, (ii) the circuit current, (iii) the phase angle between circuit current and voltage, (iv) the power factor, and (v) the power consumed. 	10
*****All the best *****			