CHENNAI INSTITUTE OF TECHNOLOGY
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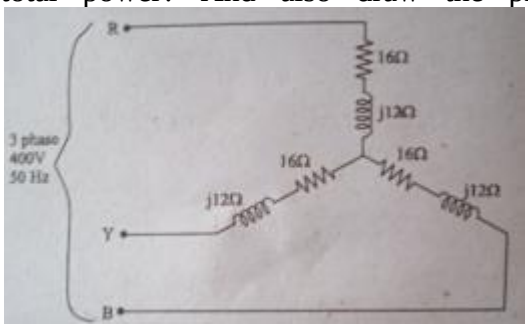
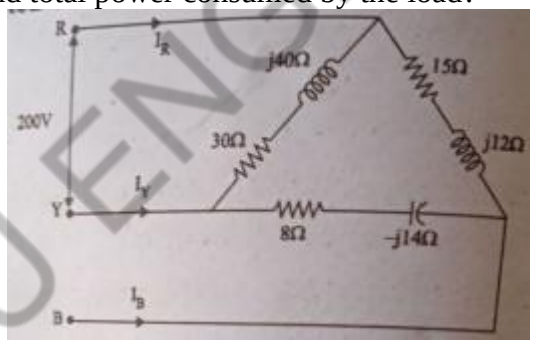
UPC QUESTIONS

Unit 5 Three phase circuits

S.No	Question	Grade	Grade	Mark
1	1. An balanced star connected four wire load has a balanced supply voltage of 400 V. The load impedance are $Z_R = (16+ j12)$, $Z_Y = (16+ j12)$, $Z_B = (16+ j12)$. Calculate the line current, neutral currents and total power? And also draw the phasor diagram of the same. 	A		
2	An unbalanced delta connected load has a supply voltage of 200 V. The load impedance are given in figure below. Calculate the line currents, phase currents and total power consumed by the load? 		B	
3	Calculate the total power input and readings of the two wattmeter connected to measure power in a three phase balanced load, if the reactive power input is 15 KVAR and the load power factor is 0.8. Also compute load KVA?	A		
4	Derivation of Power measurement by 2 wattmeter method?	A		
5	Calculate the reading of the two wattmeters (W1 and W2) connected to measure the total power for a balanced star connected load shown in figure below fed from a three phase 400 V balanced supply with phase sequence as RYB. The load impedance per phase is 20 + j15. Also find the line and phase currents, power factor, total power, total reactive VA and total VA?	A		

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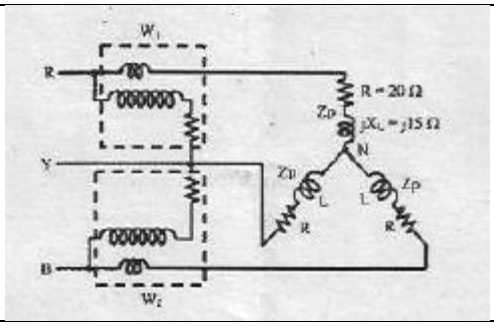
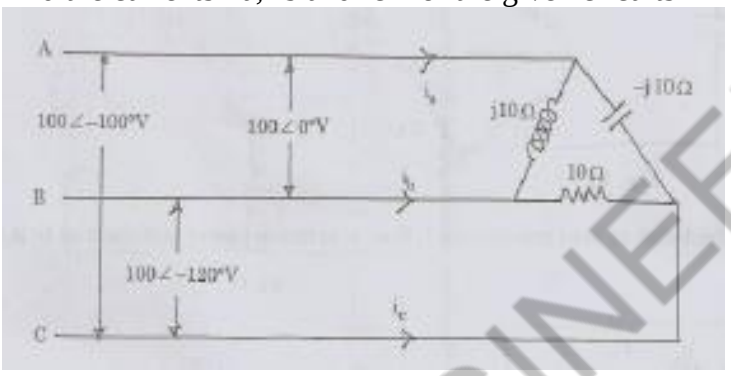
				
6	An unbalanced star connected four wire load has a balanced supply voltage of 400 V. The load impedance are Z_R = (4+ j8) ohm , Z_Y = (3+j 4) , Z_B = (15 +j 10). Calculate the line current, neutral currents and total power? And also draw the phasor diagram of the same.	A		
7	Find the currents Ia, Ib and Ic for the given circuits 	A		
8	Show that (i) in a star connected network, line voltage= √3 times phase voltage, and (ii) in delta connected network line current=√3 times phase current?	A		
9	The input power to a 3 phase load is 10 KW at 0.9 pf. The wattmeter's are connected to measure power, Find the individual readings of the wattmeter?	A		
10	A Three phase, balanced delta connected load of (4+j8) ohm is connected across a 400 v, 3 phase balanced supply. Determine the phase currents and line currents?		B	

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