Module 2 : AC Circuits 6 Hrs

Alternating voltages and currents, RMS, average, form factor, peak factor; Single phase RL, RC, RLC series and parallel circuits; Power and power factor; Balanced three phase systems

Course Outcome

- Evaluate AC circuit parameters using laws

Simple problems

A balanced star connected load of 3+j4 impedance is connected to 400 V, 3-phase supply. Determine the phase voltage, phase current, line current, power factor and the real power consumed by the load

Simple problems

A 3-phase balanced wye connected load has 400 V line to line voltage and 10 A line current. Determine the line to neutral voltage and phase current.

Simple problems

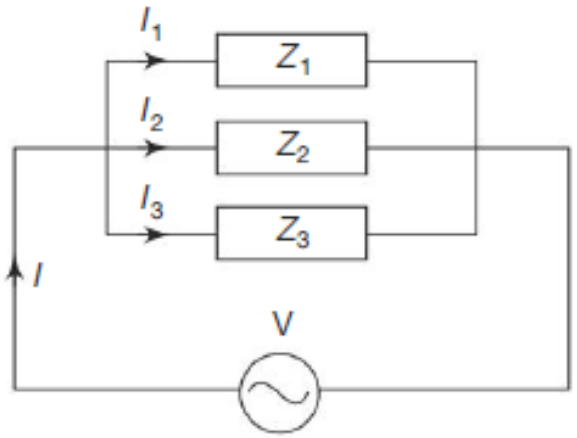
A balanced delta connected load of (4+j6)Ω impedance is connected to 415 V, 50 Hz, 3-phase supply. Determine the phase voltage, phase current, line current, power factor and the real power consumed by the load.

Simple problems

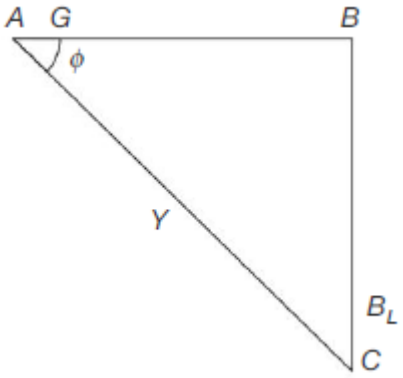
When 3 balanced impedances are connected in delta across a 3-phase, 400 V, 50 Hz supply, the line current drawn is 20 A at a lagging power factor of 0.3. Determine the impedance connected in each phase.

Admittance and its components

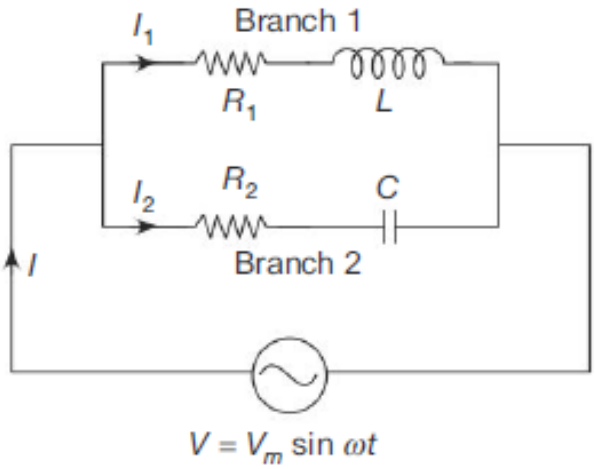
- Admittance of a circuit is defined as reciprocal of impedance.
- Z = R+jXL
- Y = 1/Z



Admittance and its components



Simple parallel circuits



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