Benha University   **Electrical Circuits (2)**   **Electrical Eng. Dept.**
Faculty of Engineering   **1st year communication**
Shoubra   **10-12 May 2015**

Sheet (10) ... Three Phase Systems

1. A three-phase, three-wire 100 volt, ABC system supplies a balanced delta-connected load with impedances of $20\angle 45°$ ohms. Determine the line currents and draw the phasor diagram.

2. Three identical impedances of $5\angle 30°$ ohms are connected in wye to a three-phase, three-wire, 150 volt, CBA system. Find the line currents and draw the phasor diagram.

3. Three identical impedances of $10\angle 30°$ ohms in a wye connection and three identical impedances of $15\angle 0°$ ohms also in a wye connection are both on the same three-phase, three-wire 250 volt system. Find the total power.

4. Three identical impedances of $12\angle 30°$ ohms in a delta connection and three identical impedances of $5\angle 45°$ ohms in a wye connection are on the same three-phase, three wire, 208 volt, ABC system. Find the line currents and the total power.

5. A three-phase, three-wire, 240 volt, CBA system supplies a delta-connected load in which Zab = $25\angle 90°$, ZBc = $15\angle 30°$ and ZCA = $20\angle 0°$ ohms. Find the line currents and the total power.

6. A three-phase, four-wire, 208 volt, ABC system supplies a wye-connected load in which ZA=$10\angle 0°$, ZB= $15\angle 30°$ and Zc=$10\angle -30°$ ohms. Find the line currents, the neutral current and the total power.

7. The load impedances of Problem 6 are connected to a three-phase, three-wire, 208 volt, ABC system. Find the line currents and the voltages across the load impedances.

Best Wishes;

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