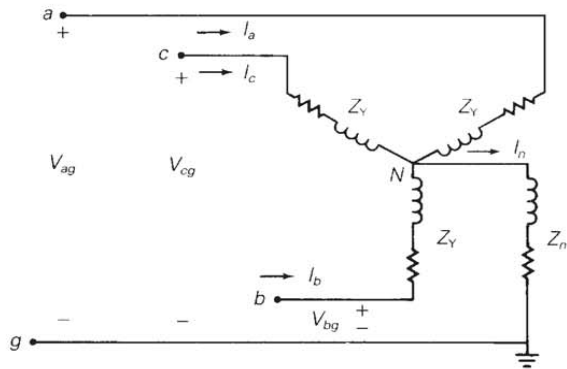


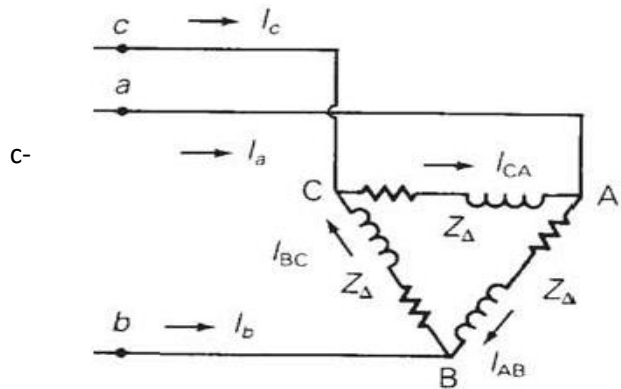
Çankaya University
Electrical & Electronics Engineering Department
EE 465 Power Systems Homework # 3

1-Derive the Zero, positive and negative sequence networks for the following;

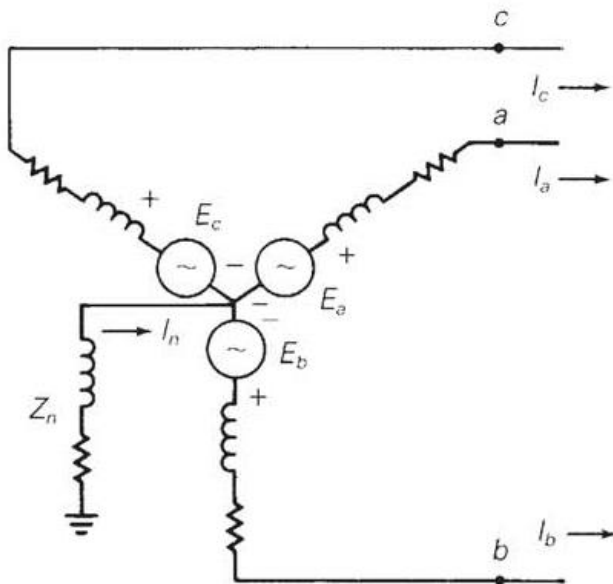
a- Load



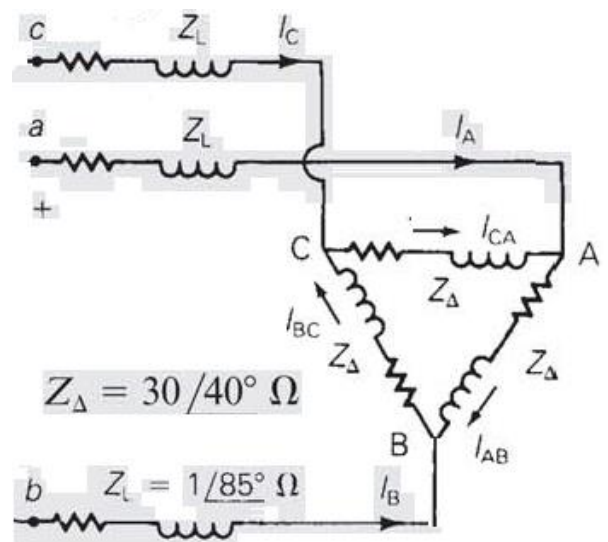
b-Load



c-Synchronous Generator



d-Load



2-

A Y-connected voltage source with the following unbalanced voltage is applied to the balanced line and load of (d)

$$\begin{bmatrix} V_{ag} \\ V_{bg} \\ V_{cg} \end{bmatrix} = \begin{bmatrix} 277/0^\circ \\ 260/-120^\circ \\ 295/+115^\circ \end{bmatrix} \text{ volts}$$

The source neutral is solidly grounded. Using the method of symmetrical components, calculate the source currents I_a , I_b , and I_c .