

Unit 12 - Sinusoidal Steady State Analysis - 2

Course outline

How to access the portal

Unit 0

Basic Circuit Elements and Waveforms

Mesh and Node Analysis

Network Theorems -1

Network Theorems -2

First Order and Second Order Circuits

Laplace Transform and its Application

Circuit Analysis Using Laplace Transform

Two Port Network

Sinusoidal Steady State Analysis - 1

Sinusoidal Steady State Analysis - 2

Ideal Transformer and Introduction to Three-Phase Circuits

Balanced Three-Phase Connections

Balanced Wye-Delta and Delta-Delta Connections

Balanced Delta-Wye Connection and Power in Balanced Three-Phase System

Unbalanced Three-Phase System and Three-Phase Power Measurement

Quiz : Assignment 10

Assignment 10 - Solution

State Variable Analysis

Analogous Systems

Assignment 10

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

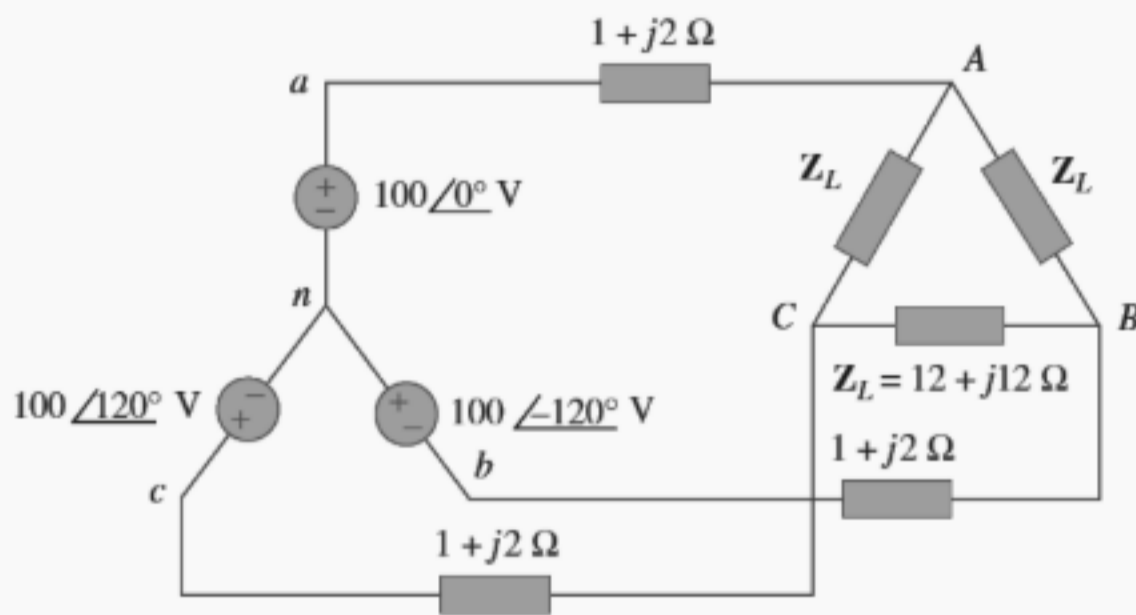
Due on 2019-10-09, 23:59 IST.

1) In a balanced three-phase Y-Y system, the source is an abc sequence of voltages and $V_{an} = 100\angle 20^\circ$ V rms. The line impedance per phase is $0.6 + j1.2\Omega$, while the per-phase impedance of the load is $10 + j14\Omega$. Calculate the voltage across the load connected to phase c? **2 points**

- 46.42 \angle 139.35°V
- 46.42 \angle 19.35°V
- 92.84 \angle 139.35°V
- 92.84 \angle - 19.35°V

No, the answer is incorrect. Score: 0
Accepted Answers: 92.84 \angle 139.35°V

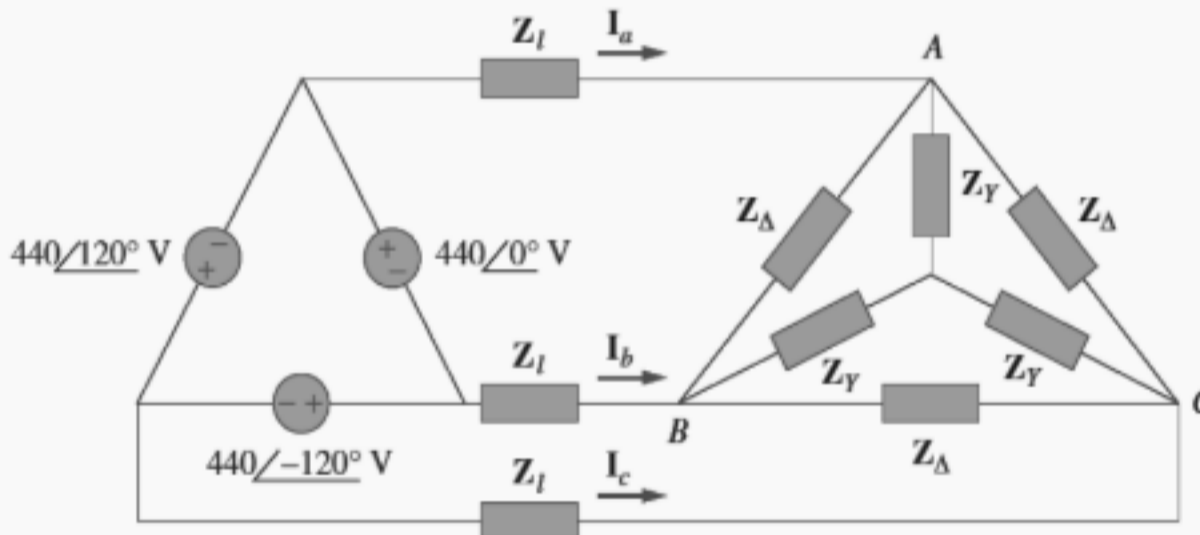
2) Obtain the magnitude of the line current for the figure shown below. **2 points**



- 12.8A
- 8.86A
- 17.42A
- 34.8A

No, the answer is incorrect. Score: 0
Accepted Answers: 12.8A

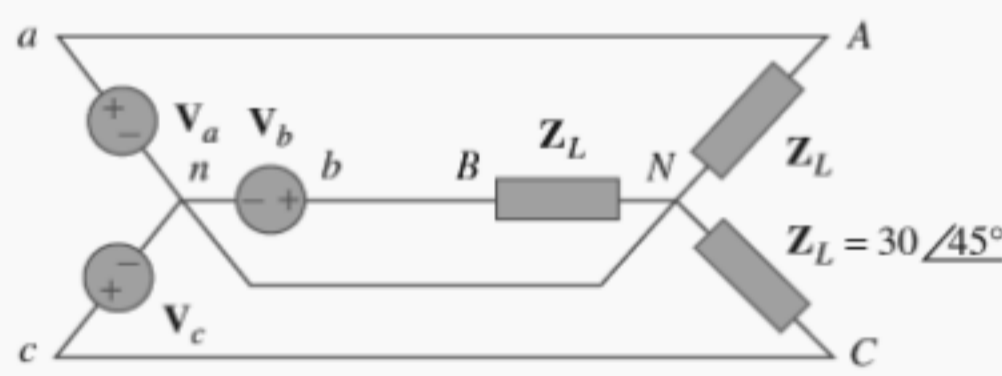
3) Find I_c in the figure shown below. Take $Z_\Delta = 12 - j15\Omega$, $Z_Y = 4 + j6\Omega$, and $Z_l = 2\Omega$. **2 points**



- 32.88 \angle 91.6° A
- 32.88 \angle - 28.4° A
- 16.44 \angle 91.6° A
- 16.44 \angle - 28.4° A

No, the answer is incorrect. Score: 0
Accepted Answers: 32.88 \angle 91.6° A

4) In the figure given below, the rms value of the line voltage is 208V. Find the average power delivered to the load. **2 points**



- 0.51kW
- 1.02kW
- 2.04kW
- 4.08kW

No, the answer is incorrect. Score: 0
Accepted Answers: 1.02kW

5) A balanced three-phase Y-source with $V_P = 210$ V rms drives a Y-connected three-phase load with phase impedance $Z_A = 80\Omega$, $Z_B = 60 + j90\Omega$, and $Z_C = j80\Omega$. Calculate the complex power delivered to the load. Assume that the neutrals are connected. **2 points**

- 551.25 + j551.25VA
- 226.15.4 + j339.25VA
- j551.25VA
- 777.4 + j890.45VA

No, the answer is incorrect. Score: 0
Accepted Answers: 777.4 + j890.45VA