

# KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

## ELECTRICAL ENGINEERING DEPARTMENT

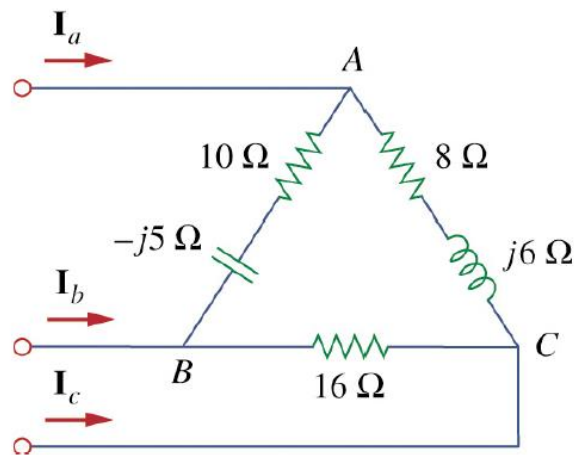
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EE-306

### Key Solution

Quiz 1      Sec.: 5      I.D.:      Ser#:      Name:

Q.1 If the line current absorbed by the delta-load shown below is  $I_a = 10 \angle 15^\circ$ , then the line current  $I_c$  is (5-points)



- a.  $10 \angle 15^\circ$ .
- b.  $10 \angle 135^\circ$ .
- c.  $10 \angle -105^\circ$ .
- d. None of above.

Q.2 For a Y-connected load with a per-phase impedance of  $Z_Y = Z \angle \theta$  and rms phase voltage  $V_p$  across the  $Z_Y$  and rms phase current  $I_p$  through  $Z_Y$ , the average power consumed by each phase of the load is (5-points)

- a.  $P_p = \sqrt{3} V_p I_p \cos \theta$ .
- b.  $P_p = 3 V_p I_p \cos \theta$ .
- c.  $P_p = V_p I_p \cos \theta$ .
- d.  $P_p = V_p I_p \sin \theta$ .