

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
ELECTRICAL ENGINEERING DEPARTMENT
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EE-360

Key Solutions

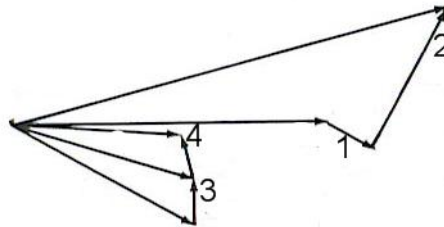
Quiz # 6 Serial #

Name:

I.D.#

Circle the correct answer.

1) In the phasor diagram of a Pi-nominal transmission line shown below, number "1" must be (.....), number "2" must be (.....), number "3" must be (.....), and number "4" must be (.....).



- a) $R \cdot I_R$; $j X_L \cdot I_R$; I_C ; I_S
b) $R \cdot I_R$; $j X_L (I_R + I_{CR})$; I_{CR} ; I_{CS} .
c) $0.5 \cdot R \cdot I_R$; $j 0.5 \cdot X_L (I_R + I_{CR})$; I_{CR} ; I_{CS} .
d) $0.5 \cdot R \cdot I_R$; $j 0.5 \cdot X_L \cdot I_R$; I_C ; I_S .

2) A 60 Hz, 3-phase, transmission line is 40 miles long with a total series impedance of $(35 + j 140)$ Ohm. It delivers 40 MW at 220 kV and 0.9 power factor lagging. The line voltage at the sending end is

- a. 239.7 $\angle 5.4^\circ$ kV.
b. 239.7 $\angle 35.4^\circ$ kV.
c. 231. $\angle 3.2^\circ$ kV.
d. 231. $\angle 33.2^\circ$ kV.