

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

ELECTRICAL ENGINEERING DEPARTMENT

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EE-360

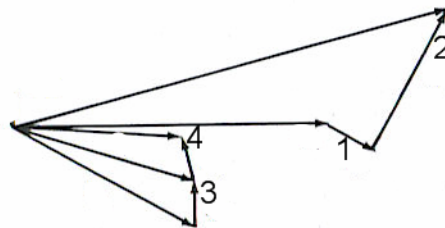
Key Solution

Quiz # 9 Serial #

Name:

I.D.#

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



a) $R \cdot I_R ; j X_L (I_R + I_{CR}) ; I_{CR} ; I_{CS} \cdot$

b) $0.5 \cdot R \cdot I_R ; j 0.5 \cdot X_L (I_R + I_{CR}) ; I_{CR} ; I_{CS} \cdot$

c) $R \cdot I_R ; j X_L \cdot I_R ; I_C ; I_S \cdot$

d) $0.5 \cdot R \cdot I_R ; j 0.5 \cdot X_L \cdot I_R ; I_C ; I_S \cdot$

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.