

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
ELECTRICAL ENGINEERING DEPARTMENT
Dr. Ibrahim O. Habiballah
EE-360

Key Solution

Quiz # 1 Serial # Name: I.D.#

Q.) The two-wattmeter method is applied to a three-phase three-wire 120 V inductive load system. With the meters connected to lines A and B, $W_A = 920$ W and $W_B = 460$ W. Circle the correct answer.

1) The total real and reactive power absorbed by the load are

- (a) $P = 1.38$ KW, $Q = 460$ VAR
- (b) $P = 1.38$ KW, $Q = 796.7$ VAR**
- (c) $P = 2.39$ KW, $Q = 460$ VAR
- (d) $P = 2.39$ KW, $Q = 796.7$ VAR

2) The phase current when the load is Y-connected is

- (a) $I_{ph} = 6.6$ A
- (b) $I_{ph} = 4.4$ A
- (c) $I_{ph} = 7.7$ A**
- (d) $I_{ph} = 3.8$ A

3) The phase current when the load is delta-connected is

- (a) $I_{ph} = 6.6$ A
- (b) $I_{ph} = 4.4$ A**
- (c) $I_{ph} = 7.7$ A
- (d) $I_{ph} = 3.8$ A

4) The load power factor is

- (a) p.f. = 0.95 lagging
- (b) p.f. = 0.95 leading
- (c) p.f. = 0.87 lagging**
- (d) p.f. = 0.87 leading

5) The impedance when the load is delta-connected.

- (a) $Z = 23.4 - j 13.5$ Ohm
- (b) $Z = 23.4 + j 13.5$ Ohm**
- (c) $Z = 7.8 - j 4.5$ Ohm
- (d) $Z = 7.8 + j 4.5$ Ohm