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UNIVERSITY OF REGINA
FACULTY OF ENGINEERING

ENEL 382 - 1996 FALL

AC CIRCUITS TEST



COURSE TITLE: ELECTRIC POWER SYSTEMS
INSTRUCTOR: JACK D. KATZBERG
DATE: 24 September, 1996
TIME ALLOWED: 50 MINUTES.
INSTRUCTIONS: No Books, notes or calculators are allowed.

Part A: 6 marks

- (2) 1. If the current phasor through an impedance is $2A \angle 40^\circ$ and the voltage phasor across that impedance is $10V \angle 30^\circ$ what is the impedance?

- (3) 2. What are the impedances of a resistor, an inductor and a capacitor respectively?

- (1) 3. What is the expression for the susceptance associated with an inductance?

NAME: _____

Part B: 19 marks

(4) 3. What is the input admittance of the circuit of Figure 1?

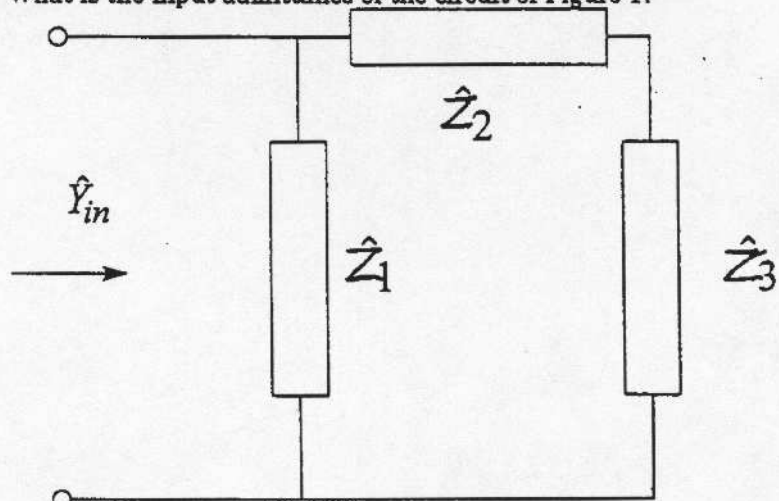


FIGURE 1

Answer:

NAME: _____

- (6) 4. For the circuit of Figure 2:
(a) Write the two loop equations.
(b) Write the node equation at Node A.

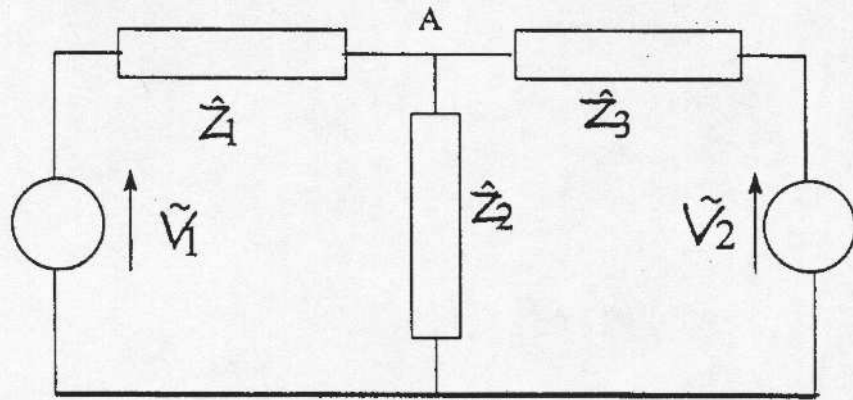


FIGURE 2

Answer:

NAME: _____

(9) 5. Determine the Thevenin Equivalent of the circuit of Figure 3.

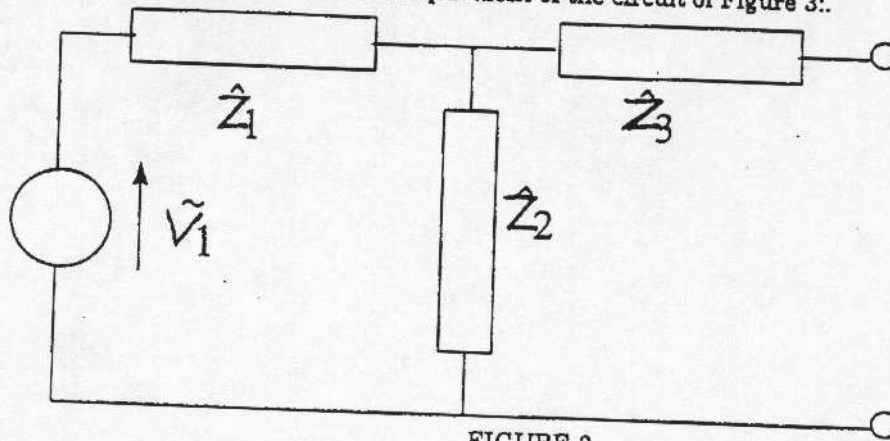


FIGURE 3

Answer: