The Ohio State University
Department of Electrical Engineering

EE 341

Energy Conversion

Home work Set # 4

Print Your Name

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The Last Four Digits of Your OSU I.D. number :

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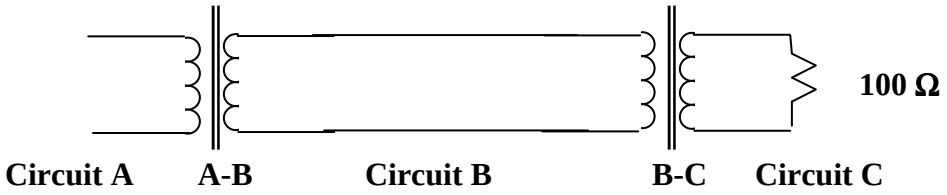
Problem No.1:

Three parts of a single-phase electric systems are designated **A, B** and **C** , and are connected to each other through transformers, as shown below:



The transformers are rated as follows:

Transformer	kVA	Ratio	Leakage Reactance
A-B	10000	13.8kV/138kV	10%
B-C	10000	138kV/69kV	8%

If the base in **Circuit B** is chosen as 10000kVA, 138kV, answer the following questions:

	Question	True	False
a-	Z_{base} in circuit A equals to Z_{base} in circuit B	[ ]	[ ]
b-	V_{base} in circuit A is 138 kV	[ ]	[ ]
c-	S_{base} in circuit C is 10 000kVA	[ ]	[ ]
d-	The 100Ω resistor referred to circuit B is 400Ω	[ ]	[ ]
e-	The 100Ω resistor referred to circuit A is 4Ω	[ ]	[ ]
f-	The per-unit value of 100Ω resistor is the same in all parts of the circuit	[ ]	[ ]

2. Use Matlab to solve problem 2-10 (page 136). Please submit the matlab code, comments and results.

3. Solve problem 2-11 (page 136). Please give detailed steps.