

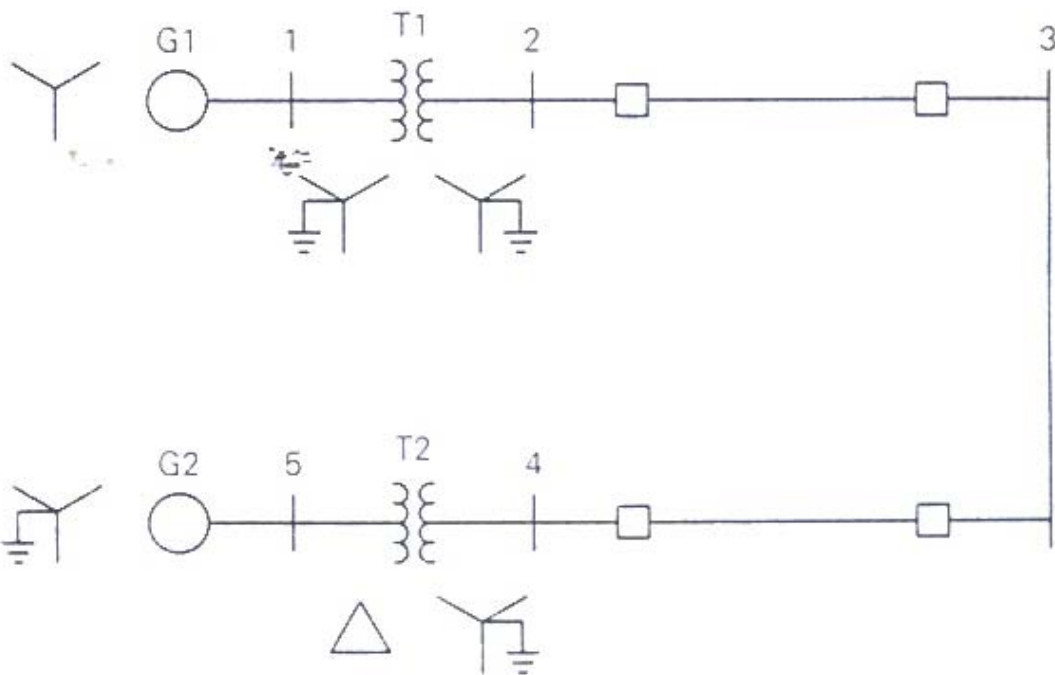
**KING FADD UNIVERSITY OF PETROLEUM & MINERALS**  
**ELECTRICAL ENGINEERING DEPARTMENT**

**EE 466 Quiz #1: October 1, 2007**  
**Instructor: Dr. Zakariya Al-Hamouz**

Student Name: \_\_\_\_\_

ID #: \_\_\_\_\_

For the single line diagram shown in figure 1, find the equivalent positive, negative and zero sequence networks.



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**EE 466 Quiz #2: October 30, 2007**  
**Instructor: Dr. Zakariya Al-Hamouz**

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Student Name: \_\_\_\_\_ ID #: \_\_\_\_\_

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An 800/5 CT has the following class designation "10C500". Calculate its magnetizing and secondary impedance when the primary current is 8000A.

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**EE 466 Quiz # 3**

**November 27, 2007,**

**Instructor: Dr. Zakariya Al-Hamouz**

A 2500 kVA, 13.8 kV motor is protected using a relay whose characteristics is attached. The motor starting current is 5 times its full load current. The motor is protected by 51 and 50 relays. Select and set the phase and ground relays using the following parameters:

Phase-to-phase fault current	17000 A
Three phase fault current	25000 A
Ground fault current	10% of phase-phase fault current
Motor's starting time	3 seconds

**Allow for a motor service factor of 20%.**

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**EE 466 Quiz # 4**

**December 26, 2007,**

**Instructor: Dr. Zakariya Al-Hamouz**

A percentage differential relay is applied for the protection of a 7.5 MVA, 13.8kV generator. The relay has a pickup of 0.12 A and a slope of 20%. The CT is 600/5. A high impedance internal fault developed while the generator is **25% overloaded**. The fault draws 10% of the load current into the ground. Will the relay trip under this condition? Draw the relay characteristics.