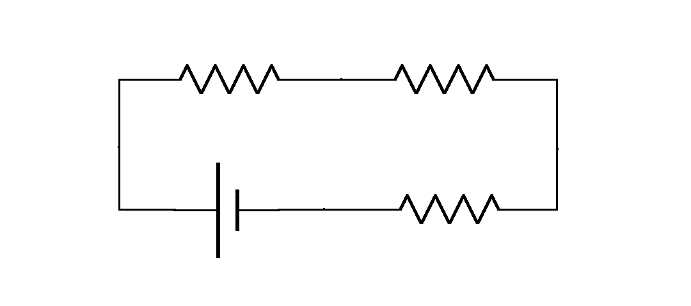
PHYS 202 Test #2 (Version \_\_\_) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

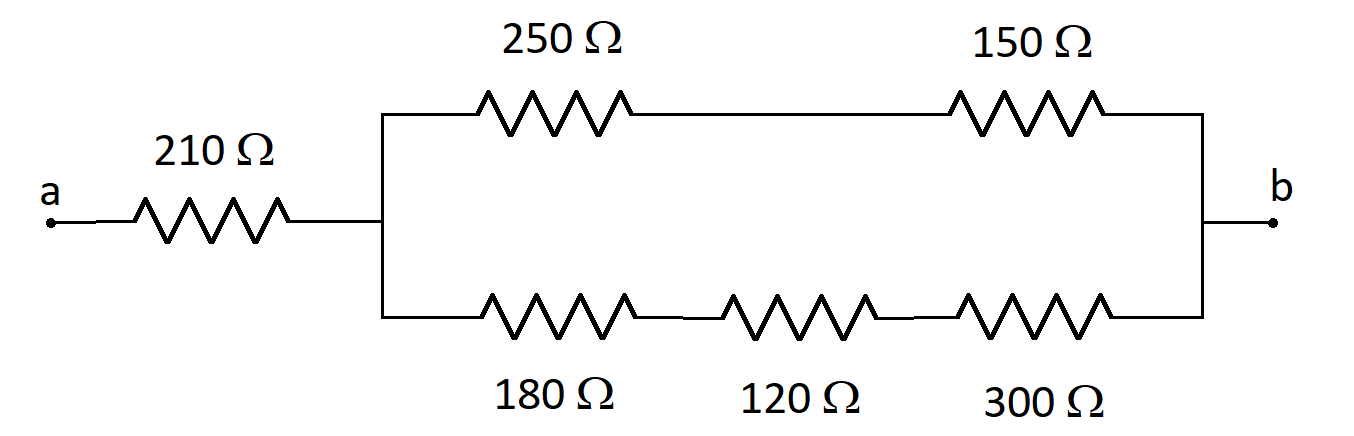
***Do NOT cheat!!!*** Do NOT copy from someone sitting next to you … they have a different test.

Before starting the test, make sure there isn’t a page missing or misprinted.

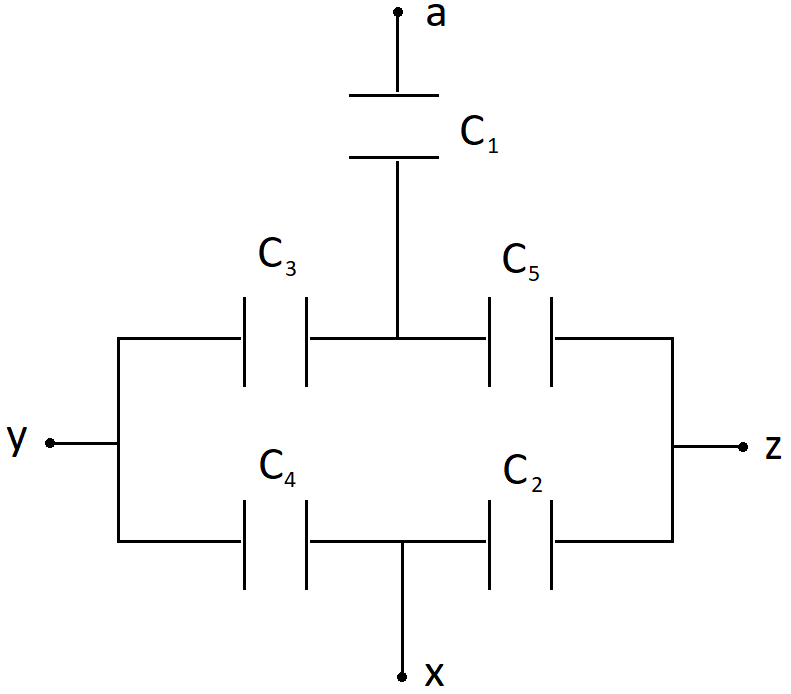
Section A: ***TWELVE*** multiple-choice questions:

* Each is worth 2 points (unless you select “k”).
* Use your “Blue Book” to solve the problems.
* Circle only ***ONE*** choice for each multiple-choice question.
* Circling more than ONE choice will score ZERO out of 2 points (even if one of the circled choices is “k”).

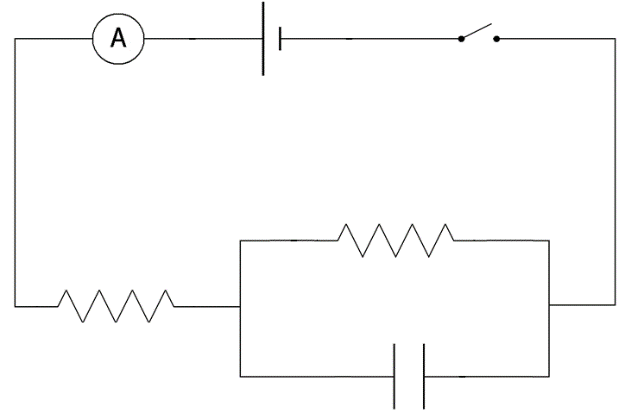
1. A parallel plate capacitor consists of two conducting plates each with an area of \_\_\_\_\_\_\_\_ m2. The plates are separated by Strontium titanate (which has a dielectric constant of \_\_\_\_\_). 
2. In the circuit shown above the ideal battery is \_\_\_\_ V and the resistors are \_\_\_\_ , \_\_\_\_  and \_\_\_\_ .



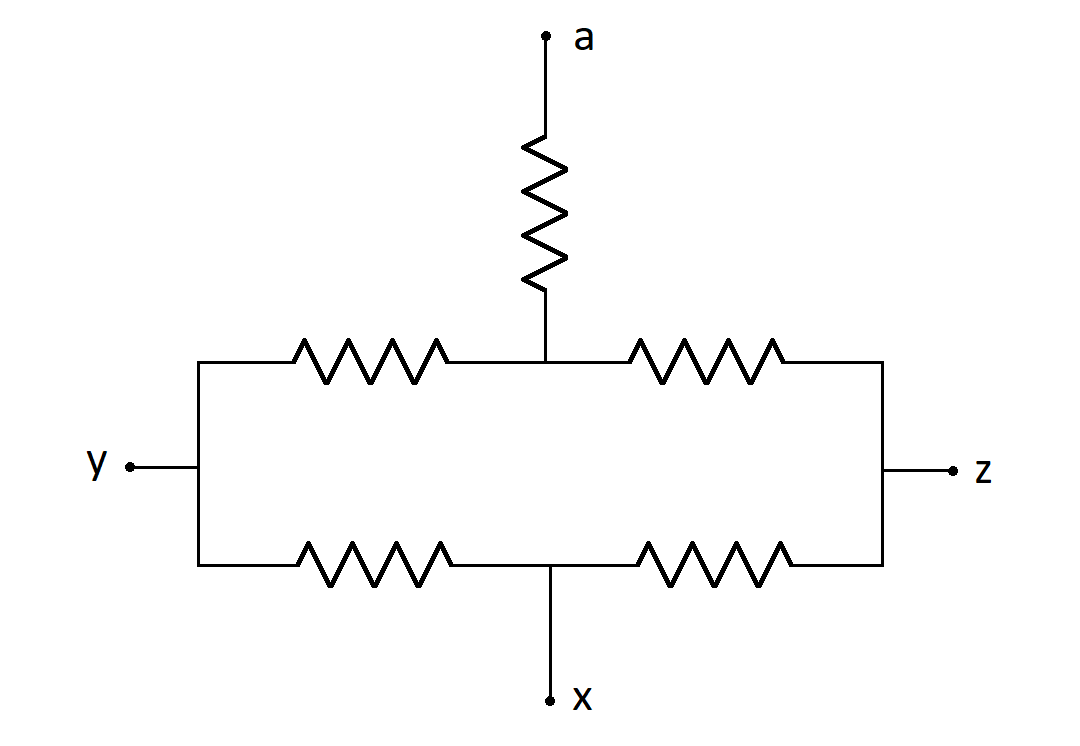
1. The combination of resistors show above is connected to a voltage source. If the potential difference across the \_\_\_\_\_\_  resistor is measured to be \_\_\_\_\_\_ V,



1. \_\_\_\_\_\_\_\_ What is the equivalent capacitance between points **\_\_\_\_** and **\_\_\_\_\_**?
2. A copper wire has a radius of \_\_\_\_\_\_ mm and a length of \_\_\_\_\_\_ m. Taking copper to have a resistivity of \_\_\_\_\_\_ m at \_\_\_\_\_ °C and a temperature coefficient of \_\_\_\_\_ (°C) ‒1,
3. An RC series circuit consists of an unknown capacitor and a \_\_\_\_\_\_ k resistor. The combination is connected to a switch and a \_\_\_\_\_\_ V ideal battery. The current through the resistor is measured to be \_\_\_\_\_ mA ….
4. In the nasty circuit shown above, each of the emf’s is \_\_\_\_\_\_ V and each resistor is \_\_\_\_\_ . What is the value of the indicated current?
5. An air-filled cylindrical capacitor consists of an inner cylinder of length \_\_\_\_\_ cm and radius \_\_\_\_\_ cm …
6. An electrically charged particle passed through a velocity selector that has field strengths of \_\_\_\_\_ T and \_\_\_\_\_ N/C. After the velocity selector there is a region with a magnetic field …
7. A non-ideal battery has an emf of \_\_\_\_ V. When the battery is connected to a \_\_\_\_  external resistance …



1. In the circuit shown above the emf is \_\_\_\_\_ V and the capacitor is initially uncharged. When the switch is first closed the ammeter reading is \_\_\_\_\_ A. After a very long time the ammeter reading is down to \_\_\_\_\_ A. If the capacitor is \_\_\_\_ mF, what is the maximum



1. Each of the resistors in the combination above is \_\_\_\_\_\_ . A \_\_\_\_\_  resistor is connected between points **\_\_\_** and **\_\_\_\_.** What is the equivalent resistance between points **\_\_\_\_** and **\_\_\_\_**?

Set-up problems:

Each of the requested loops and junctions is worth 1 point.

