Physics 1102 Experiment 7 Pre-Laboratory Assignment

Name_____ Instructor name _____

You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.

1. (a) How does a conductor differ from an insulator? (b) What is Ohm's law? (c) What does a "short" circuit mean? (3 pts)

2. A $16.50\,cm$ long wire has a diameter of $0.355\,mm$ and resistivity of $7.65\,x\,10^{-7}\,\Omega cm$. (a) Calculate its resistance. (b) If a $3.85\,volt$ battery is connected to the same wire, what current exists in the circuit? (7 pts)

3. For a circuit shown, which bulbs will go out when a wire is connected between points:
(a) $\boldsymbol{a}$ and $\boldsymbol{b}$,
(b) $\boldsymbol{b}$ and $\boldsymbol{c}$,
(c) $\boldsymbol{c}$ and $\boldsymbol{d}$, and
(d) $\boldsymbol{e}$ and $\boldsymbol{f}$?
Explain your answers thoroughly. **Note:** The one wire is moved between the set of points. (10 pts)