**Physics Unit 12: Electric Current Test Review:**

**Test Setup:**

Multiple Choice: 15( 2 pt each ) Short Answers: 5 (5 pt each) Problems: 8 ( 1st 4 = 5pt each 2nd 4 = 8 point each)

**Short Answers:**

1. Be able to identify the resistance, voltage and current in a circuit diagram.
2. What part of a circuit dissipates energy?
3. In a series circuit, one of the resistors is replaced with a resistor having a lower resistance value. How does this affect the current in the circuit?
4. A voltmeter is used to measure the voltage across a device and is placed in parallel with the device. All voltmeters have resistance. Why would a voltmeter with a high resistance be preferable to one with low resistance when measuring the voltage across a resistor that is part of a complex circuit?
5. In a circuit diagram, be able to tell which resistors, if any, have equal voltages across them?

**Multiple Choice:**

1. Describe what a schematic diagram is
2. Define:
3. Closed circuit
4. Open circuit
5. How does the potential difference across the bulb in a flashlight compare with the terminal voltage of the batteries used to power the flashlight/
6. Know the formula for total current
7. Know how to calculate potential difference taken over 3 resistors together
8. Know how to calculate Requ
9. How is the equivalent resistance of a complex circuit usually determine
10. How does one find the current in a complex circuit
11. Several questions ask you to find the equivalent resistance in a problem or diagram
12. In any complex resistance circuit the voltage across any resistor in the circuit is always what?

**Problems:**

* **The difference between the 5 point and the 8 point problems is not in difficulty, but that the 8 point problems have multiple parts to answer ( ex part a, b, c) while the 5 point problems have less parts (part a only or part a & b)**
* Physics Circuits diagrams to label ( voltage, current, resistance and calculate): 1 ( 8pts)
* **For the remaining problems: Be able to calculate**:
* Resistance
* Total current
* Power in a circuit
* Convert between KWh and Joules
* Electric Cost
* Equivalent resistance
* Example problems:
1. A current of 0.20 A passes through a 3.0 ohm resistor. The resistor is connected in series with a 6.0 volt battery and an unknown resistor. What is the resistance value of the unknown resistor?
2. Three resistors with values of 15 ohms, 41 ohms and 58 ohms, respectively are connected in parallel. What is their equivalent resistance?