SPH3U0 **Grade 11 Physics- Electricity Review ISU Package** Feb 2020

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

*Use your textbook and the listed online references to complete the following review package on the topic of electricity. The package will be due on Tuesday Feb 18th!*

*Pearson Reference Sections: Chapter 11-Sections 11.1, 11.2, 11.3, 11.4*

***Communication: [20 marks]***

***Content: [17 marks]***

***Clearly presented answers, numbers include units, GRASS solution for problems [3 marks]***

1. **Electric Circuit Basics:**
2. Describe the function of the following parts of an electrical circuit.
3. Source (e.g. battery) , load (e.g. light bulb, motor) , conducting wires, switch **[3 marks]**
4. Sketch a simple circuit with a battery and light bulb controlled by a switch.
5. **Circuit Parameters: Current (I), Electric Potential or Voltage (V), Resistance (R)**
6. **Current:**  **[3]**
7. Define current and state the SI units of current.
8. Current can be calculated using the following formula: Define the terms in the equation and state the units of each term.
9. A battery delivers. a charge of 6.00 C in a time of 1.00 minute. What is the current in Ampere?
10. **Voltage**
11. Define Electric potential difference (ΔV) and state the SI units of potential. **[4]**
12. Electric potential can be calculated using the following formula. . Define the terms in the equation and state the units of each term.
13. A potential difference of 10.0 V is measured across a resistor in a circuit. If a charge of 90.0 C passes through the resistor, how much electrical energy is converted to heat by the resistor?
14. A standard D cell battery has a voltage of 1.5V while a large square lantern battery has voltage of 6.0 V. Explain the difference between these two batteries in terms of the energy they can supply to electrons passing through their circuit.
15. **Resistance**  **[3]**
16. Define Electrical Resistance (R) and state the SI units of resistance.
17. Electrical resistance can be calculated using the following formula. . Define the terms in the equation and state the units of each term.
18. A light bulb has a potential difference of 3.00 V across it. There is a current of 0.20 A flowing through the bulb. What is the resistance of the light bulb?
19. **Using an Ammeter and Voltmeter [4]**
20. What does an ammeter measure?

How are ammeters connected (in series or parallel)?

Show a sketch illustrating how an ammeter is connected in a circuit.

1. What does a voltmeter measure?

How are voltmeters connected (in series or parallel)?

Show a sketch illustrating how a voltmeter is connected in a circuit.