**FPS – Chapter 20 - Unit 6 Review**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

1. Define the following terms:
   1. Electric Charge
   2. Electric Force
   3. Electric field
   4. Static electricity
   5. Coulomb
   6. Law of Charges
   7. Law of Conservation of Charge
   8. Charge by contact
   9. Charge by induction
   10. Charge by friction
   11. Static Discharge
   12. Lightning
   13. Electric current
   14. Direct current
   15. Alternating current
   16. Conductor
   17. Insulator
   18. Resistance
   19. Potential difference
   20. Voltage
   21. Ampere
   22. Battery load
   23. Ohm’s Law
   24. Electrical circuit
   25. Series circuit
   26. Parallel circuit
2. What is a cation and how does a neutral atom “become” a cation?
3. What is an anion and how does a neutral atom “become” an anion?
4. What are the three subatomic particles? What are their charges?
5. Describe what occurs when a balloon is rubbed with a piece of wool.
6. Refer to #5. What occurs when that charged balloon is held by uncharged scraps of paper?
7. Why does lightning occur? Use a diagram to support your answer.
8. How is alternating current different from direct current?
9. Why does a conducting wire sometimes heat up? How does a plastic insulator prevent damage?
10. What factors affect resistance?
11. What are the SI units for charge, current, voltage, and resistance?
12. Describe what will happen to a circuit in which the resistance is doubled.
13. Draw the schematic symbols for a one cell battery, two cell battery, open and closed switch, bulb, resistors, motors, and buzzer.
14. What are the differences between series and parallel circuits?
15. A circuit has 20 ohm resistance and 40 amp current. What is the voltage?
16. A circuit has 2 bulbs with 5 ohm resistance each and 60 volt battery. What is the current?
17. A circuit has a 300 amp current with a 4 volt battery. What is the resistance?
18. Draw the simple circuits described. Label the charges on the batteries, the conventional current flow AND the electron flow. A circuit has 3 buzzers in series with a two cell battery and a closed switch.
19. Draw the simple circuits described. Label the charges on the batteries, the conventional current flow AND the electron flow. Draw a circuit with 3 bulbs in parallel, two resistors NOT in parallel, a two cell battery and a closed switch.
20. Draw the simple circuits described. Label the charges on the batteries, the conventional current flow AND the electron flow. Draw a circuit with 3 bulbs in parallel, one motor (not in parallel), a two cell battery, and an open switch.
21. Solve for the unknown variable in the following diagrams.   
    