Name _____ Date_____

Dangelmaier – Physics 19-1: Electric Current

1. _____ _____ power lights, radios, television sets, air conditioners, and refrigerators.
2. Currents ignite the _____ in automobiles engines.
3. Electric currents are responsible for _____ _____ between body muscles and the _____.
4. A _____ exists whenever there is a net movement of _____ charge through a medium.
5. Define current

6. What is the formula for electric current?

7. What is the SI unit for current? _____
8. Moving charges that make up a current can be _____, _____, or _____.
9. In a common conductor such as copper, current is due to the motion of _____.
10. In certain particle accelerators, a current exists when positively charged _____ are set in motion. In gases and dissolved salts, current is the result of _____ charges in one direction and _____ charges moving in the opposite direction. These are called _____ _____.
11. Many metals are good conductors because they contain large numbers of free _____.
12. Body fluids and salt water are able to conduct electric charge because they contain charged atoms called _____; thus, they are called charged carriers. A solute that consists of charge carriers is called an _____.
13. When a light switch is turned on, an _____ _____ is established in the wire. The _____ _____ (same as previous blanks) travels through the wire at nearly the _____. The charges travel much more slowly.

14. When a _____ is in electrostatic equilibrium, the _____ move randomly. When a _____ _____ is applied across the conductor, an _____ _____ is set up inside. The _____ due to that _____ sets the electrons in _____, creating a _____.
15. These electrons do not move in _____ _____ along the conductor, they undergo repeated _____ with vibrating metal _____ of the conductor. Therefore, the energy transferred increases the _____ energy of the atoms, and the _____ temperature _____.
16. The average _____ gained by the _____ as they are accelerated by the _____ _____ is greater than the average _____ in energy due to the collisions.
17. Both _____ and _____ maintain a _____ difference across their terminals by converting forms of energy into _____ energy.
18. _____ convert chemical energy to electrical _____ energy.
19. Explain how a battery works and is “used up”.

20. Why are generators sometimes more preferable than batteries? How do generators work?