**Physics 100** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 2: Electricity**

**Notes, part 2: Textbook Chapter 18.1, 18.3 Conductors & Insulators, Electric Field, Etc.**

**Conductors and Insulators**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allow electrons to easily move through them. List some examples.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ do not allow electrons to move through them. List some examples.

3. Protons \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (can/cannot) flow through solid conductors.

4. **Ground**: a large, neutral source of charge (like the Earth). The ground can serve two purposes…

 “The ground” can…

 “The ground” can…

5. What happens to an object when the object is “grounded?”

6. What other objects, other than the Earth, could be used to ground something?

7. What is an electric field?

8. What creates an electric field?

**9. Electric Field Hockey (pHet Simulation)**

1. Find and run the simulation.

2. Click the “Field” and “Trace” buttons.

3. Try to win levels 1 and 2.

4. What happens when you turn off “puck is positive,” so that the puck becomes negative?

10. Interesting (and important) facts:



**Fact #1:** Charges “leak away” from surfaces of charged conductors that are

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 This explains why lightning rods are added to buildings:

 This also explains why the surface of a Van de Graaff generator is \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Fact #2:** The electric field inside a conductor is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is why

 one of the safest places to be during a lightning storm is

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_