Name _____ Date _____ Period _____

Chapter 32: Test Review

P H Y S I C S : E L E C T R O S T A T I C S

Directions: *Answer the following questions using your textbook and notes from chapter 32 (Electrostatics)*

1. Draw and label a typical atom and label the following: ***nucleus, protons, neutrons, electrons***

2. What are the charges on the following particles?

   a. ***Electron***-

   b. ***Proton***-

   c. ***Neutron***-

3. ***Coulomb's law*** says that the force between any two charges depends _____

on the size of the charges and _____ on the square of the distance between the charges.

4. Two positively charged particles held close to each other are released. Describe what happens after they are released.

5. A positive and a negative particle are held close to each other and released. Describe what happens after they are released.

6. What is ***electrical polarization***?

7. What is the difference between an electrical ***conductor*** and a ***insulator***?

8. How do you charge an object by ***induction***?

9. What is an ***ion***?

10. What does it mean when we say ***charge is conserved***?

11. What happens to the ***electrical force*** between to charged particles if the distance between them is doubled?

12. What is a ***semiconductor***?

13. What are the differences between ***electrical forces*** and ***gravitational forces***? (name two)

14. Two charges separated by a distance of 1 meter exert a 100-N force on each other. If the charges are pulled to a 2 meter separation distance, the force on each charge will be?

$$F = k\frac{q_1 q_2}{d^2}$$

15. Two charges separated by a distance of 1 meter exert a 100-N force on each other. If the magnitude of each charge is doubled, the force on each charge is?

$$F = k\frac{q_1 q_2}{d^2}$$

16. What is the SI unit of charge?