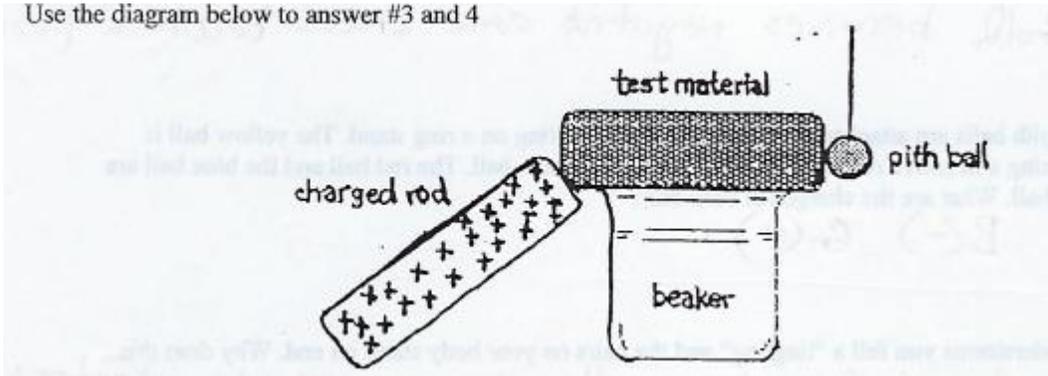


Review – Electrostatics

1. A proton carries a _____ charge and an electron carries a _____ charge.
2. A glass rod is rubbed with a piece of silk. During the process the glass rod acquires a positive charge and the silk
 - a) acquires a positive charge also
 - b) acquires a negative charge
 - c) remains neutral
 - d) could either be positively or negatively charged depending on how hard the rod was rubbed

Use the diagram below to answer #3 and 4



3. In the diagram, if the test material is made of a conductor, what charge will be transferred to the pith ball?
 - a) neutral charge
 - b) positive charge
 - c) negative charge
 - d) no charge will transfer
4. If the test material in the diagram above is an insulator, what charge will be transferred?
 - a) neutral charge
 - b) positive charge
 - c) negative charge
 - d) no charge will transfer
5. Suppose an electroscope has a neutral charge. A negatively charged rod is brought near, but does not touch the electroscope. What best explains what happens?
 - a) the leaves become negative and separate
 - b) the leaves become positive and separate
 - c) the leaves stay neutral and separate
 - d) the leaves stay together
7. An object charged by contact with a charged rod will
 - a) have the opposite charge as the rod
 - b) have the same charge as the rod
 - c) have a noncontact charge
 - d) be neutral
8. An object charged by induction from a charged rod will
 - a) have the opposite charge as the rod
 - b) have the same charge as the rod
 - c) have a noncontact charge
 - d) be neutral
9. What is the difference between a good conductor and a good insulator?
 - a) electrons are able to move easily in a good conductor
 - b) electrons are able to move easily in a good insulator
 - c) electrons are tightly held by a good conductor
 - d) protons are able to move easily in a good insulator

19. Sphere A carries a net positive charge, and sphere B is neutral. They are placed near each other on an insulated table. Sphere B is briefly touched with a wire that is grounded. Which statement is correct?
- a) Sphere B remains neutral
 - b) Sphere B is now positive
 - c) Sphere B is now negative
 - d) Cannot determine
20. An originally neutral electroscope is grounded while a positively charged rod is held near it. After the rod is removed, the electroscope
- a) remains neutral
 - b) is negatively charged
 - c) is positively charged
 - d) could be either negative or positive
21. An atomic nucleus has a charge of $+40e$. An electron is 10^{-9} m from the nucleus. What is the force on the electron?
22. A $+30\mu\text{C}$ charge is attracted to a $-90\mu\text{C}$ charge with a force of 1.8 N. How far apart are the charges?
23. A 1.0 C charge is 15 m from a second charge, and the force between them is 1.0 N. What is the magnitude of the second charge?