

Name: _____

Lab Quiz 08: Electrostatics

Answer each of the following questions using the information you collected during the lab. Please submit your completed quiz before you leave the lab. No papers will be accepted after the end of the lab period. Each question is worth 2 points.

- True or false: The balloon becomes positive because you are scraping protons off your hair and onto the balloon.
- True or false: The charged balloon sticks to the wall because it transfers positive charge to the wall.
- True or false: The aluminum frame of the chalkboard is the best surface to try to attach the balloon. The balloon will always stick to metal longer than on any other surface you test.
- True or false: The balloon will stick to the wall longer on a humid day than it will on a dry day.
- How does the charged rod deflect the stream of water?
 - The rod pulls electrons out of the water, towards the rod.
 - The rod pushes electrons out of the water, but away from the rod.
 - The water molecules rotate and the positive side of each molecule is attracted to the negative rod.
 - the rod exerts a very strong gravitational pull on the water. It has nothing to do with electric charge.
- When the negatively charged rod approaches the ball of the electroscope (without touching it)
 - the leaves separate.
 - the leaves pull together.
 - nothing happens until the rod touches the electroscope ball.
 - nothing happens, even after the rod touches the ball.
- As the negatively charged rod approaches the metal ball,
 - negative electrons are repelled from the ball to the leaves.
 - negative electrons are attracted to the ball from the leaves.
 - positive protons are attracted up from the leaves onto the ball.
 - no charges of any kind will move until the instant when the rod touches the ball.
- True or false: When the negatively charged rod approaches the electroscope, charges are transferred from the rod to the ball before the rod ever touches the ball.
- True or false: When the negatively charged rod touches the ball of the electroscope, negative charges are transferred from the electroscope to the rod.
- Which was easier to attract electrostatically?
 - Salt.
 - Pepper.
 - No difference.
- When you pull two separate strips of tape from the roll,
 - they will always repel each other.
 - they will always attract each other.
 - they may attract or repel, depending on which side of each strip is closest.
 - they neither attract or repel; they will only stick together because of the adhesive.
- True or false: When you pull a strip of tape from the roll, the sticky side becomes positively charged because it pulls some protons off the flat side of the roll.
- True or false: You can 'recharge' the tape strips by sticking them to the tabletop and pulling them off quickly.
- When you stand with one hand on the van deGraaff sphere and someone switches the generator on,
 - you will get a wicked shock! Wait until the sphere has charged up for a few minutes before you try to put your hand on the sphere and you won't get shocked.
 - you will get shocked, but waiting until the sphere charges up is unwise.
 - you will not notice any electrical shock, but you are accumulating negative charges.
 - you will not get shocked, because you will not accumulate any charge. All the charges stay on the van deGraaff sphere.
- To light the fluorescent tube using the charging van deGraaff, hold the bulb
 - in position A, but not position B.
 - in position B, but not position A.
 - in either position A or B.
 - so that it touches the sphere. The bulb will not light at either A or B.
- Why does your hair stand on end as the van deGraaff charges?
 - Because you are terrified and might die.
 - Negative charges accumulate on the strands, which then repel each other.
 - Human hair does not obey the law of gravity like other masses.
- True or false: You would be safer if you stood barefoot on a metal platform while touching the van de Graaff.

