

## Answers to selected questions

### Chapter 12

**Q6.** The electroscope leaves will move closer together because they are negatively charged having been charged with the plastic rod and the fur gains a positive charge in the rubbing process. The fur will pull negative charge away from the leaves.

**Q12.** The ball will not end up being charged. If you remove the rod before removing your finger, any charge on the ball will flow to your body. The finger must be removed first in order for charging by induction to work.

**Q18.** No. The force will be quadrupled in size since the electrostatic force is doubled twice by the doubling of both charges.

**Q24.** No. The electric field produced by a single point charge decreases in strength as the distance from the charge increases so it is not uniform.

**Q30.** Point B will have the higher electric potential because it is nearer to the positive charge. More work would be required to bring a positive test charge to point B than to point C.