



Intro to Chemistry Test - Lesson 4 - Electrical Charges

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1. Which statement about electrons is untrue?

- A) Electrons have a negative electrical charge.
- B) Electrons repel each other.
- C) Electrons spin as they circle the nucleus.
- D) Because electrons repel each other, each electron circles the nucleus alone.

2. Which statement about valence electrons is untrue?

- A) Valence electrons are the electrons in an atom's outer ring.
- B) Valence electrons shed energy when they are given to another atom, or shared with another atom.
- C) Valence electrons travel in pairs.
- D) Pairs of valence electrons spin in the same direction.

3. Which statement about electrical neutrality in an atom is untrue?

- A) Electrical neutrality means that the atom's positive and negative charges overlap each other.
- B) Electrical neutrality means that the atom is neither positive nor negative.
- C) Electrical neutrality in an atom means that the positive charge in the nucleus equals the negative charge in the electrons.
- D) Electrical neutrality in an atom means that the electrical charge on the atom is zero.

4. Which statement about the van der Graaff generator is true?

- A) The van der Graaff generator pulls protons off atoms in the base and delivers them to the dome up top.
- B) The van der Graaff generator pulls electrons off atoms in the base and delivers them to the dome up top.
- C) The van der Graaff generator pulls protons off atoms in the dome and delivers them to the base down below.
- D) The van der Graaff generator pulls electrons off atoms in the dome and delivers them to the base down below.

5. When electrons are pulled off atoms in the base of the van der Graaff generator, the atoms in the base become \_\_\_\_\_.

- A) negative ions
- B) positive ions
- C) electrically neutral
- D) radioactive

6. Which statement is true?

- A) Electrically neutral atoms are attracted to negative ions.
- B) Electrically neutral atoms are attracted to positive ions.
- C) Electrically neutral atoms are attracted to other electrically neutral atoms.
- D) Electrically neutral atoms are not attracted to any other atom.

7. When the van der Graaff generator was turned on and the small dome was brought close to the large dome up top, a spark jumped from the large dome to the small dome. Which statement is untrue about the spark between the large and small domes?

- A) The spark represented electrons on the large dome repelling each other enough to leap through the air.
- B) The spark represented electrons on the large dome being attracted to the positively charged small dome.
- C) The spark represented negative ions on the large dome leaping through the air to the small dome.
- D) The spark developed when enough electrons were brought to the large dome and created a large enough electrical difference between the large dome and the small dome to overcome the resistance of the air.

8. Which statement about batteries is untrue?

- A) A car battery keeps a car engine running.
- B) A battery stores electrons in the form of ions inside the battery.
- C) Electrons flow out of a battery only when they have a way of returning to the battery.
- D) Electrons flow out of the negative terminal of a battery and return through the positive terminal.

9. Electrons accumulating in one location are called static electricity. Static electricity can occur when you do all of the following, except \_\_\_\_\_.

- A) rub a balloon against your hair
- B) walk across a carpet in your socks
- C) insert a plug into a wall socket
- D) rub a glass rod with piece of fur

10. Are ions atoms?

- A) Yes
- B) No