



1. Which statement about a covalent bond is untrue?
 - (A) Covalent bonds bond two neon atoms together.
 - (B) Covalent bonds always form when two identical atoms bond into a molecule.
 - (C) In a covalent bond, the electrons are shared equally between two atoms.
 - (D) In a covalent bond, the shared electrons are situated between the two atoms.

2. The reason that carbon and hydrogen share electrons equally in a covalent bond includes that _____.
 - (A) hydrogen's nucleus is closer to the shared electrons than carbon.
 - (B) hydrogen has no intervening electrons blocking its view of the shared electrons.
 - (C) carbon's nucleus is only six times larger than hydrogen's nucleus.
 - (D) carbon has four electrons to share.

3. Which answer does not explain why methane is a gas at room temperature?
 - (A) Methane is a small molecule.
 - (B) Each carbon-hydrogen bond is nonpolar.
 - (C) All four carbon-hydrogen bonds in a methane molecule are equally spaced apart.
 - (D) The carbon atom itself is nonpolar.

4. Electrolysis allowed water molecules to be split into their individual atoms of hydrogen and oxygen. Twice as much hydrogen gas accumulated as oxygen gas. What do you predict would result if we placed the hydrogen and oxygen gases in the same container and lit the mixture with a match flame?
 - (A) Nothing would happen other than the gas mixture would heat up.
 - (B) The hydrogen gas would explode, leaving the oxygen gas intact.
 - (C) The oxygen gas would burn bright, leaving the hydrogen gas intact.
 - (D) Water droplets would form.

5. How many electrons does each oxygen atom share when two oxygen atoms bond and form a molecule of oxygen gas?
 - (A) 2 electrons
 - (B) 3 electrons
 - (C) 4 electrons
 - (D) 5 electrons