

Quiz for Video 9 – Lewis Structures

- When drawing a Lewis diagram for a single atom, what number of "dots" are placed around the atom?
 - The total number of electrons
 - Only the core electrons
 - Only the valence electrons
 - Always 2
- Oxygen has 6 valence electrons but would like to access 8, to be isoelectronic with Neon. How many covalent bonds must oxygen form to do this?
 - 1
 - 2
 - 3
 - 4
- When assessing formal charge for atoms within a molecule, what value of formal charge suggests the most stable overall structure?
 - 1
 - +1
 - 0
 - +1/2 and -1/2
- Generally, a molecule can only be polar if it contains one or more polar bonds
 - True
 - False
- The octet rule states that atoms will generally want to have access to what number electrons in a Lewis structure?
 - 2
 - 4
 - 6
 - 8
- Which of the following Lewis structures features an octet rule exception (hint: draw each one out!)
 - SF₄
 - CH₄
 - H₂O
 - NH₃
- Which of the following is the most important rule when drawing a Lewis structure?
 - Adding exactly all the available valence electrons, and no more
 - Ensuring the octet rule is fulfilled
 - Minimizing formal charge
 - Making 4 bonds
- Hydrogen (H) is an exception to the octet and only wants to have access to two electrons. Because of this, how many bonds and lone pairs does H like to have?
 - 1 bond, 1 lone pair
 - 2 bonds, 0 lone pairs
 - 1 bond, 0 lone pairs
 - 0 bonds, 1 lone pair
- Carbon is the "backbone" of organic chemistry and will be featured extensively in Lewis structures. How many bonds and lone pairs does carbon prefer in a Lewis structure?
 - 0 bonds, 2 lone pairs
 - 2 bonds, 2 lone pairs
 - 4 bonds, 0 lone pairs
 - 4 bonds, 2 lone pairs
- Which of the following atoms can potentially take on an expanded octet?
 - Hydrogen (H)
 - Boron (B)
 - Carbon (C)
 - Sulfur (S)