

## Electronegativity Quiz Answer Key PDF

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**Which of the following bonds is most likely to be nonpolar covalent?**

- A. H-Cl
- B. H-F
- C. H-H ✓**
- D. H-O

**What is the significance of electronegativity in determining the polarity of a molecule?**

**Electronegativity differences between atoms in a molecule determine the distribution of electron density, which influences the molecule's overall polarity.**

**What is the general trend of electronegativity across a period in the periodic table?**

- A. Decreases
- B. Increases ✓**
- C. Remains constant
- D. Varies randomly

**Which factors influence an element's electronegativity?**

- A. Atomic number
- B. Electron affinity ✓**
- C. Ionization energy ✓**
- D. Atomic radius ✓**

**In which of the following pairs is the first element more electronegative than the second?**

- A. Oxygen and Sulfur ✓**
- B. Nitrogen and Phosphorus ✓**

**C. Chlorine and Bromine ✓**

D. Carbon and Silicon

**Which element would you expect to have a higher electronegativity, sulfur or selenium?**

**A. Sulfur ✓**

B. Selenium

C. Both have the same

D. Cannot be determined

**What is the most electronegative element?**

A. Oxygen

B. Chlorine

**C. Fluorine ✓**

D. Nitrogen

**Which elements are likely to form polar covalent bonds with hydrogen?**

**A. Fluorine ✓**

**B. Oxygen ✓**

**C. Chlorine ✓**

D. Argon

**Explain why electronegativity increases across a period in the periodic table.**

**Electronegativity increases across a period in the periodic table because the number of protons in the nucleus increases, leading to a stronger positive charge that attracts electrons more effectively.**

**On which scale is electronegativity most commonly measured?**

A. Mohs scale

B. Richter scale

**C. PAULING scale ✓**

D. Kelvin scale

**Describe how electronegativity differences can be used to predict the type of bond formed between two atoms.**

**The type of bond formed between two atoms can be predicted based on their electronegativity difference: ionic bonds form with large differences, polar covalent bonds with moderate differences, and nonpolar covalent bonds with small differences.**

**Which element has the lowest electronegativity?**

- A. Lithium
- B. Sodium
- C. Cesium ✓**
- D. Potassium

**Electronegativity tends to decrease as you move down a group because:**

- A. Atomic radius decreases
- B. Nuclear charge decreases
- C. Additional electron shells are added ✓**
- D. Electrons are closer to the nucleus

**Discuss the relationship between electronegativity and ionization energy.**

**The relationship between electronegativity and ionization energy is that both properties tend to increase across a period in the periodic table and decrease down a group, indicating that elements with high electronegativity also typically have high ionization energy.**

**How does the concept of electronegativity relate to the reactivity of metals and nonmetals?**

**Electronegativity affects reactivity by determining how easily an element can gain or lose electrons; metals are reactive due to low electronegativity, while nonmetals are reactive due to high electronegativity.**

**What type of bond is formed when the electronegativity difference between two atoms is greater than 1.7?**

- A. Nonpolar covalent
- B. Polar covalent

**C. Ionic ✓**

D. Metallic

**Why is fluorine considered the most electronegative element, and how does this affect its chemical behavior?**

Fluorine is considered the most electronegative element because it has the highest electronegativity value on the Paulin scale, which is 4.0. This strong electronegativity affects its chemical behavior by making it highly reactive, allowing it to readily form bonds with other elements, particularly metals, to create ionic compounds.

**Electronegativity is important for predicting which of the following?**

**A. Bond type ✓**

**B. Molecular polarity ✓**

C. Atomic mass

**D. Reaction outcomes ✓**

**Which of the following elements are more electronegative than carbon?**

**A. Nitrogen ✓**

**B. Oxygen ✓**

C. Hydrogen

D. Sulfur

**Which of the following statements about electronegativity are true?**

**A. It is a measure of an atom's ability to attract electrons in a bond. ✓**

B. It decreases across a period.

**C. It is higher for nonmetals than metals. ✓**

D. It is unrelated to atomic size.