

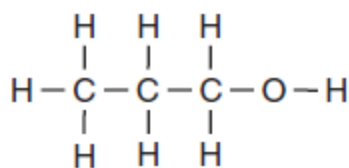
1. The electronegativity difference between the atoms in a molecule of HCl can be used to determine

- A) the entropy of the atoms
- B) the atomic number of the atoms
- C) the first ionization energy of the atoms
- D) the polarity of the bond between the two atoms

2. Which formula represents a molecule with the most polar bond?

- A) CO B) NO C) HI D) HCl

3. Given the formula:



The bond between which two atoms has the greatest degree of polarity?

- A) C and C B) C and O
- C) H and C D) H and O

4. Which molecule has a nonpolar covalent bond?

- A) H-H B) $\begin{array}{c} \text{H} \\ \diagdown \text{N} \diagup \\ | \\ \text{H} \end{array}$
- C) $\text{H}-\overset{\curvearrowright}{\text{O}}-\text{H}$ D) H-Cl

5. The chemical bond between which two atoms is most polar?

- A) C-N B) H-H C) S-Cl D) Si-O

6. The degree of polarity of a chemical bond in a molecule of a compound can be predicted by determining the difference in the

- A) melting points of the elements in the compound
- B) densities of the elements in the compound
- C) electronegativities of the bonded atoms in a molecule of the compound
- D) atomic masses of the bonded atoms in a molecule of the compound

7. Which formula represents a molecule having a nonpolar covalent bond?

- A) $\begin{array}{c} \text{H} \\ | \\ \text{H}-\text{C}-\text{N}-\text{H} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$ B) $\begin{array}{c} \text{H} \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{H} \end{array}$
- C) $\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H}-\text{C}-\text{C}-\text{H} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$ D) $\begin{array}{c} \text{H} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{H} \end{array}$

8. Which molecule contains a nonpolar covalent bond?

- A) $\text{H} \overset{\cdot\cdot}{\underset{\cdot\cdot}{\times}} \text{N} \overset{\cdot\cdot}{\underset{\cdot\cdot}{\times}} \text{H}$ B) $\text{H} \overset{\cdot\cdot}{\underset{\cdot\cdot}{\times}} \text{Cl} \overset{\cdot\cdot}{\underset{\cdot\cdot}{\times}}$
- C) $\text{H} \overset{\cdot\cdot}{\underset{\cdot\cdot}{\times}} \text{O} \overset{\cdot\cdot}{\underset{\cdot\cdot}{\times}}$ D) $\text{H} \overset{\cdot\cdot}{\underset{\cdot\cdot}{\times}} \text{H}$

9. The bonds between hydrogen and oxygen in a water molecule are classified as

- A) polar covalent B) nonpolar covalent
- C) ionic D) metallic

10. Which of these formulas contains the most polar bond?

- A) H-Br B) H-Cl C) H-F D) H-I

11. Which type of bond exists between an atom of carbon and an atom of fluorine?

- A) ionic B) metallic
- C) polar covalent D) nonpolar covalent

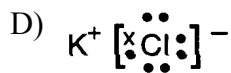
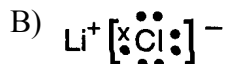
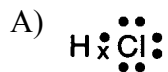
12. Which substance contains nonpolar covalent bonds?

- A) H₂ B) H₂O
- C) Ca(OH)₂ D) CaO

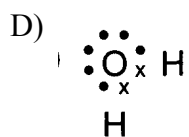
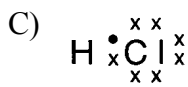
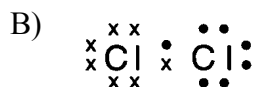
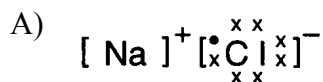
13. Which type of bond is formed between the carbon atom and the oxygen atom in CH₃OH?

- A) ionic B) electrovalent
- C) polar covalent D) nonpolar covalent

14. Which electron-dot diagram represents a molecule that has a polar covalent bond?



15. Which electron-dot formula represents a substance that contains a nonpolar covalent bond?



16. The atoms in a molecule of hydrogen chloride are held together by

- A) hydrogen bonds
- B) ionic bonds
- C) polar covalent bonds
- D) non-polar covalent bonds

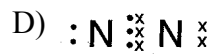
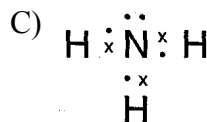
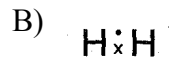
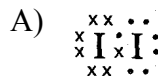
17. What type of bond exists in a molecule of hydrogen iodide?

- A) a polar covalent bond with an electronegativity difference of zero
- B) polar covalent bond with an electronegativity difference between zero and 1.7
- C) a nonpolar covalent bond with an electronegativity difference of zero
- D) a nonpolar covalent bond with an electronegativity difference between zero and 1.7

18. The electrons in a bond between two iodine atoms (I_2) are shared

- A) equally, and the resulting bond is polar
- B) equally, and the resulting bond is nonpolar
- C) unequally, and the resulting bond is polar
- D) unequally, and the resulting bond is nonpolar

19. Which molecule contains a polar covalent bond?



20. Which molecule contains a nonpolar covalent bond?

- A) I_2
- B) NH_3
- C) H_2O
- D) CO