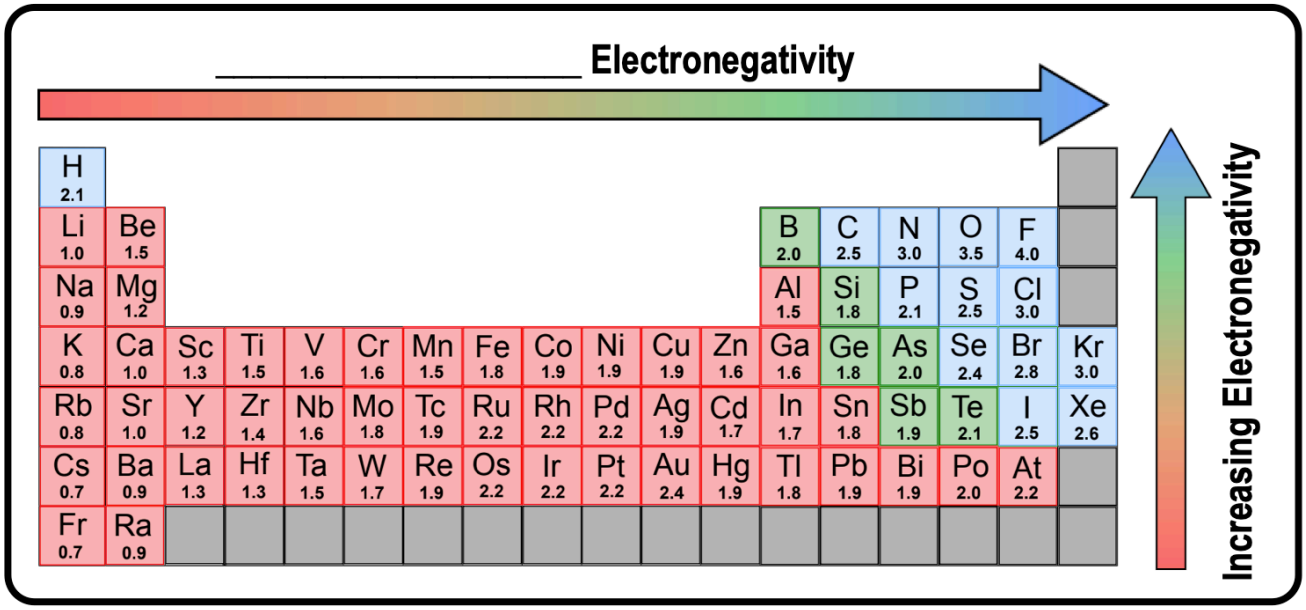
CONCEPT: COVALENT BONDS

- _____ *Bonds*: an interaction between 2 atoms resulting from the _____ of *electrons*.
  - □ _____ types of covalent bonds: 1) _____-Polar Covalent & 2) _____ Covalent.
- The two types of covalent bonds exist due to differences in atoms' _____.
  - □ *Electronegativity*: a measure of an atom's attraction to _____ (scaled from 0-4).



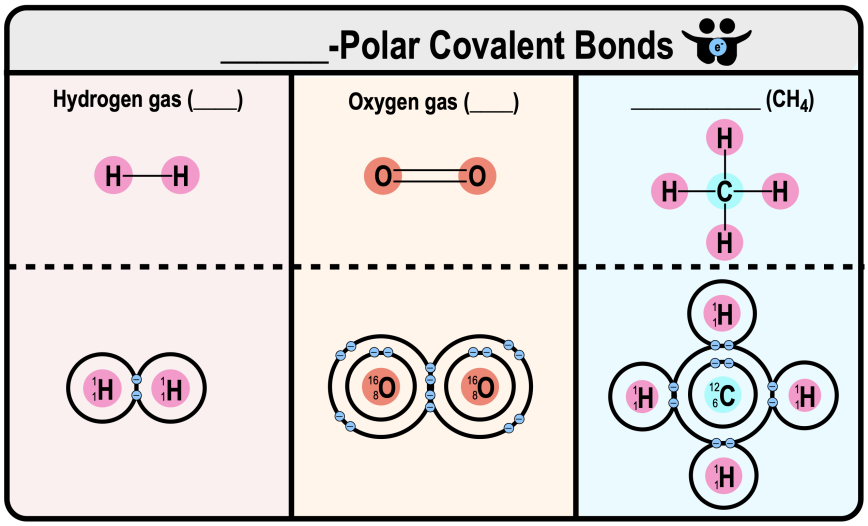
PRACTICE: When two atoms share a pair of electrons, the bonding is referred to as:

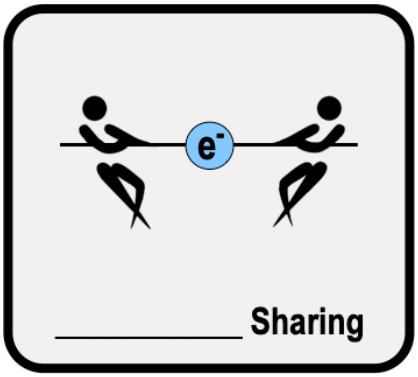
a) Ionic. b) Covalent. c) Unstable. d) Hydrogen. e) Polar.

Nonpolar Covalent Bonds

1) *Nonpolar Covalent Bond:* _____ sharing of *electrons* between atoms (due to *similar* electronegativities).

EXAMPLE: Nonpolar Covalent Bonds.





CONCEPT: COVALENT BONDS

PRACTICE: What makes a covalent bond nonpolar?

a) The bonded atoms share electrons unequally.

b) The bonded atoms share electrons equally.

c) The bonded atoms have equal electronegativities.

d) The bonded atoms have unequal electronegativities.

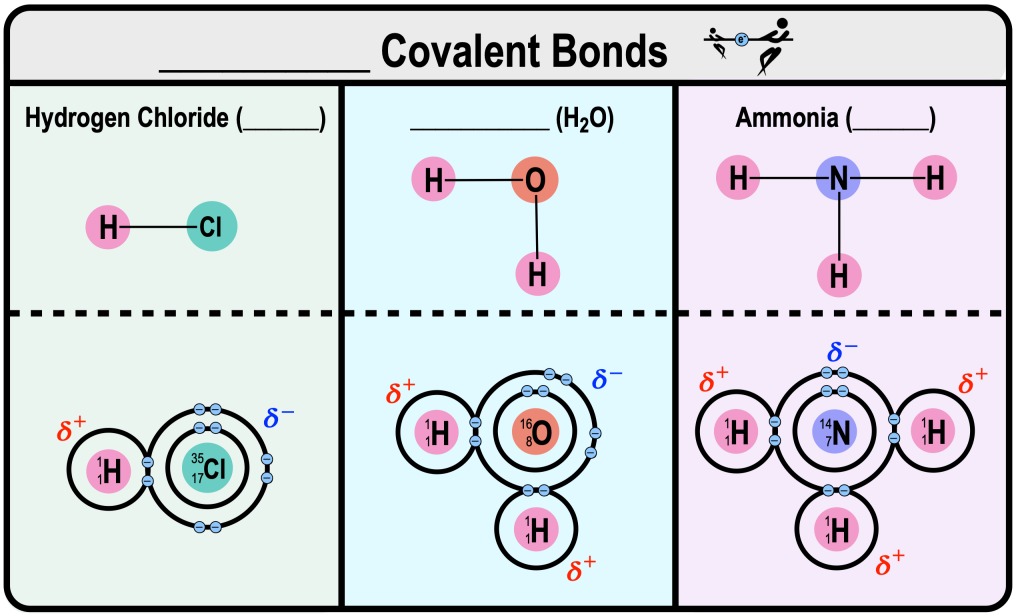
e) a and d only.

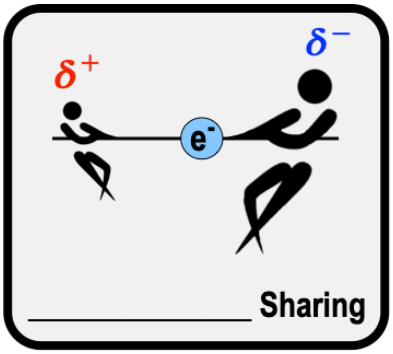
f) b and c only.

Polar Covalent Bonds

2) *Polar Covalent Bond:* _____ sharing of *electrons* between atoms (due to *different* electronegativities).

□ Unequal distribution of electrons between atoms leads to _____ (δ) *charges*.





PRACTICE: If a covalent bond is polar:

a) Electrons are not shared by atoms.

b) Protons are shared by atoms.

c) The bond is not important to living cells.

d) One of the atoms has a partial negative charge.

e) The bond is not a strong bond.

CONCEPT: COVALENT BONDS

PRACTICE: Bonds between two atoms that are equally or similarly electronegative are _____.

a) Polar covalent bonds.
b) Nonpolar covalent bonds.
c) Intermolecular bonds.
d) None of the above.

PRACTICE: The hydrogens and oxygen of a water molecule are held together by _____ bonds.

a) Electron.
b) Hydrogen.
c) Covalent.
d) Osmotic.
e) Non-covalent.
f) None of the above.