

Key

- 1) Does a Lewis structure tell which electrons come from which atoms? Explain.

NO; ORBITAL DIAGRAMS SHOW BONDING SUBLEVELS - LEWIS JUST SHOWS e^- ARE PAIRED, NOT ORIGINS

- 2) Predict the order of increasing electronegativity in each of the following groups of elements.

E.N. $\uparrow$ TO RIGHT
 $\downarrow$ DOWN

a. Na, K, Rb

c. F, Cl, Br

b. B, O, Ga

d. S, O, F

2 3 1

1 2 3

- 3) Predict with bond in each of the following groups will be the most polar.

a. C-H, Si-H, Sn-H

b. Al-Br, Ga-Br, In-Br, Tl-Br

c. C-O or Si-O

d. O-F or O-Cl

POLAR = 5-50%

NONPOLAR = 0-5%

a) $\begin{array}{r} C = 2.5 \\ H = 2.1 \\ \hline .4 \\ \hline 2.5} = 16\%$

$\begin{array}{r} Si = 1.8 \\ H = 2.1 \\ \hline .3 \\ \hline 2.1} = 14\%$

$\begin{array}{r} Sn = 1.8 \\ H = 2.1 \\ \hline .3 \\ \hline 2.1} = 14\%$

b) $\begin{array}{r} Al = 1.5 \\ Br = 2.8 \\ \hline 1.3 \\ \hline 2.8} = 46\%$

$\begin{array}{r} Ga = 1.6 \\ Br = 2.8 \\ \hline 1.2 \\ \hline 2.8} = 43\%$

$\begin{array}{r} In = 1.7 \\ Br = 2.8 \\ \hline 1.1 \\ \hline 2.8} = 39\%$

$\begin{array}{r} Tl = 1.8 \\ Br = 2.8 \\ \hline 1.0 \\ \hline 2.8} = 36\%$

c) $\begin{array}{r} C = 2.5 \\ O = 3.5 \\ \hline 1.0 \\ \hline 3.5} = 29\%$

$\begin{array}{r} Si = 1.8 \\ O = 3.5 \\ \hline 1.7 \\ \hline 3.5} = 49\%$

d) $\begin{array}{r} O = 3.5 \\ F = 4.0 \\ \hline .5 \\ \hline 4.0} = 12.5\%$

$\begin{array}{r} O = 3.5 \\ Cl = 3.0 \\ \hline .5 \\ \hline 3.5} = 14\%$