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Name: \_\_\_\_\_

**SCH 4C Bonding Quiz**

1. For each of the following pairs of elements:  
determine if each pair of elements will form ionic or covalent bonds (consider whether that atoms are metallic or ionic), also do a  $\Delta$ EN calculation

if ionic:

- add electrons to show the neutral atom's electron configuration
- add arrows to show how the electron will move
- draw in extra atoms if necessary
- draw the resulting ions, complete with empty or full valence shell, brackets and charge
- write the chemical formula
- be sure to use different symbols for the electrons of different elements

if covalent:

- add electrons to show the neutral atom's electron configuration
- state how many electrons each element needs (and show multiplication if necessary)
- draw a good diagram with extra atoms as needed to show how sharing in covalent bonds works
- add circles to show the satisfied octets or duets in the case of helium like elements (i.e hydrogen needs a duet)
- state the type of covalent bonds (i.e. single, double and how many)
- write the chemical formula
- be sure to use different symbols for the electrons of different elements
- be sure to follow the Valence Shell Electron Pair Repulsion Theory as needed

Na      with      O

5

H with O

5

Ba with N

5

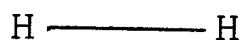
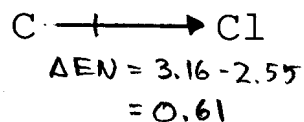
C with S

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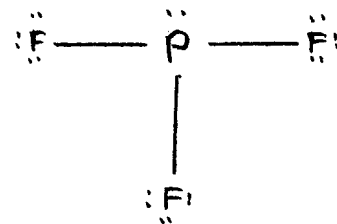
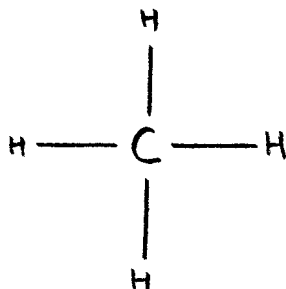
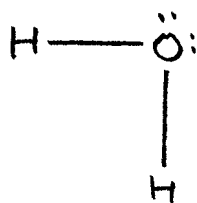
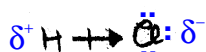
15

SCH 4C Bond Polarization Quiz

1. For each of the following pairs of atoms, use the electronegativity values to complete a  $\Delta EN$  calculation. Draw in the appropriate bond polarization



2. For each of the following stick structures, add the correct bond polarizations, determine the net molecular polarization and add  $\delta^+$  and  $\delta^-$  as appropriate. If the bond polarizations cancel out, simply write "non-polar"



3. Draw a Lewis dot diagram for the covalent bonding you would expect between silicon and chlorine. Then draw the corresponding stick structure and complete as in question #2.