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Name: _____

SCH 4C Bonding Quiz

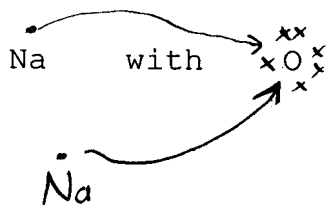
1. For each of the following pairs of elements: determine if each pair of elements will form ionic or covalent bonds (consider whether that atoms are metallic or ionic), also do a ΔEN calculation

if ionic:

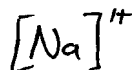
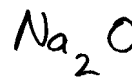
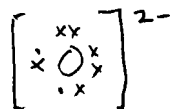
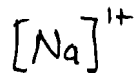
- add electrons to show the neutral atom's electron configuration
- add arrows to show how the electron will move
- draw in extra atoms if necessary
- draw the resulting ions, complete with empty or full valence shell, brackets and charge
- write the chemical formula
- be sure to use different symbols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

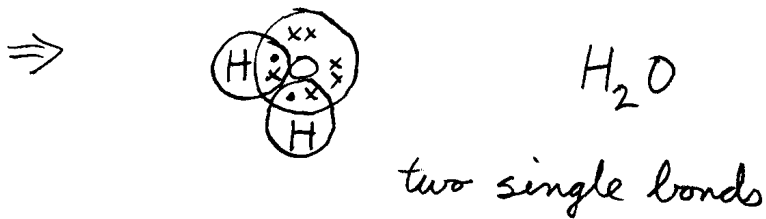
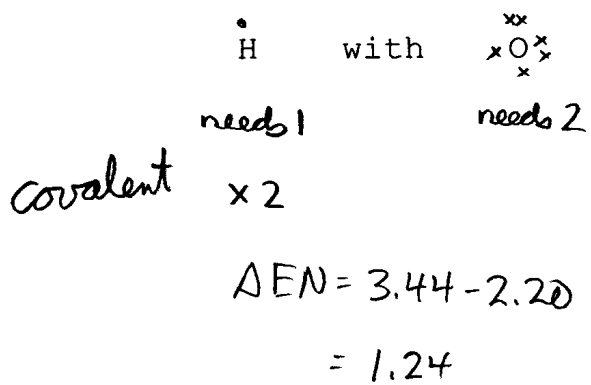


\Rightarrow

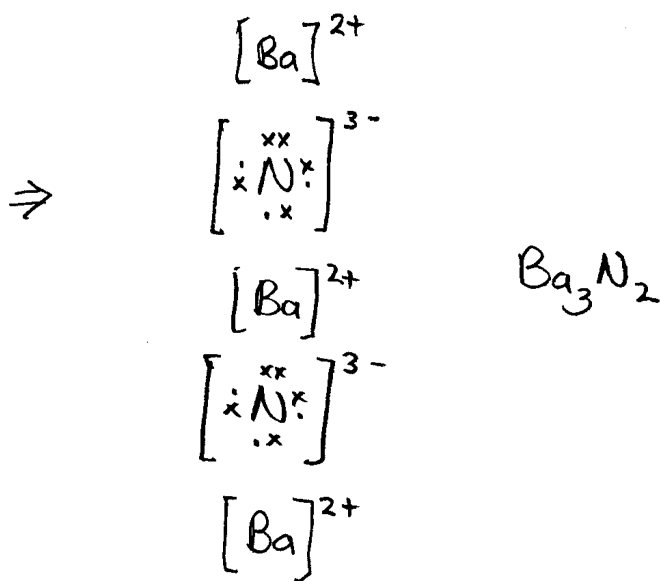
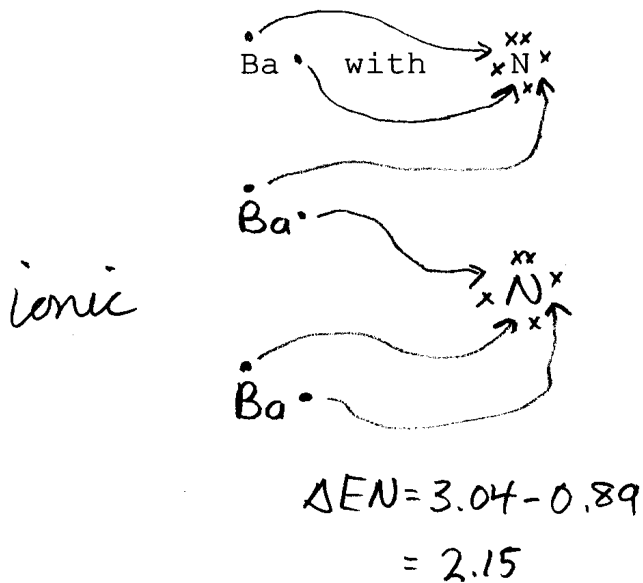


ionic

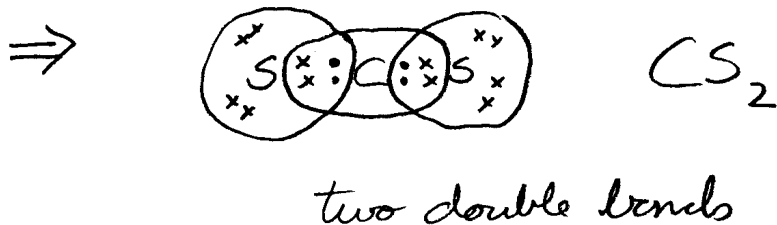
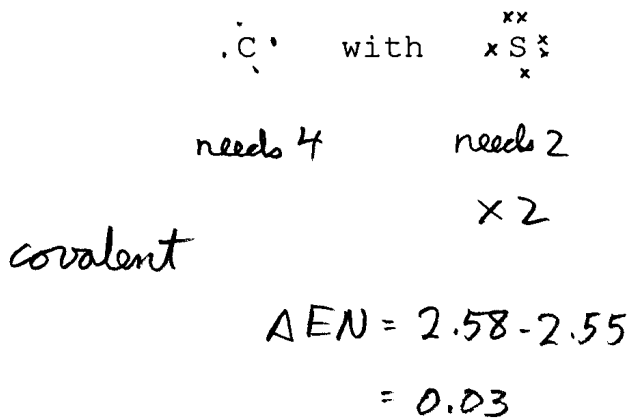
$$\begin{aligned} \Delta EN &= 3.44 - 0.93 \\ &= 2.51 \end{aligned}$$



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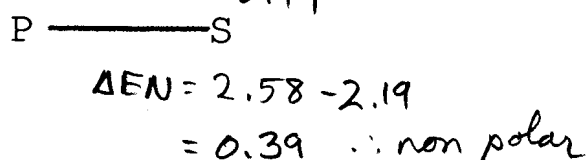
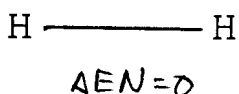
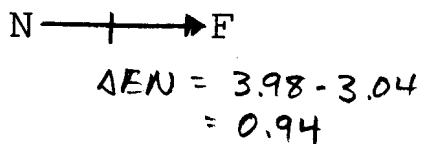
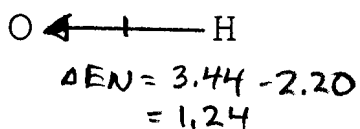
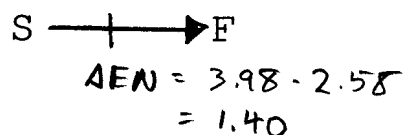
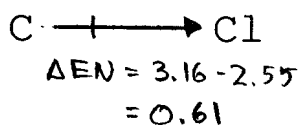
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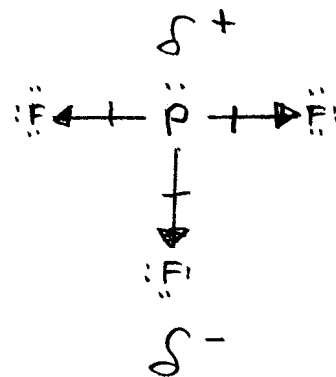
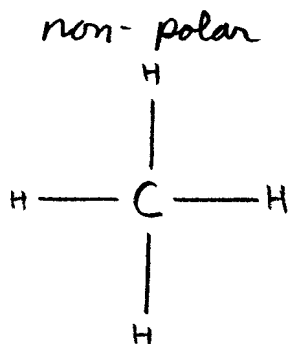
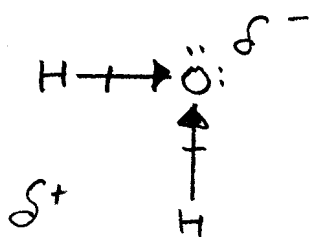
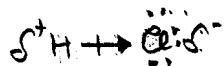
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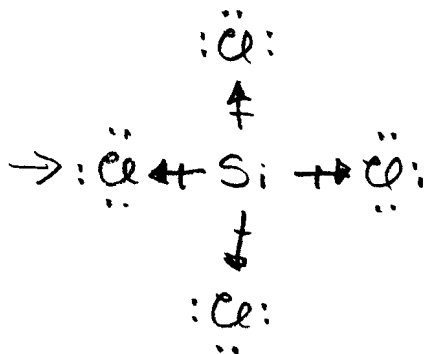
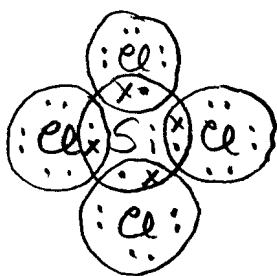
2. For each of the following pairs of atoms, use the electronegativity values to complete a ΔEN calculation. Draw in the appropriate bond polarization



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



4. 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.



non-polar

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