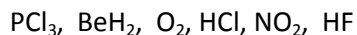


SAMPLE QUESTIONS

CHEMICAL BONDS

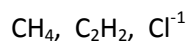
1. Determine the polarity of the molecules in the following substances.



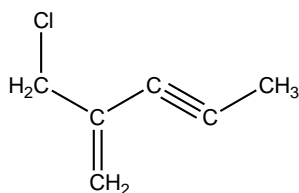
Non polar Covalent Bond:

Polar Covalent Bond:

2. Give the electron dot (Lewis) structures of the following compounds or ions.



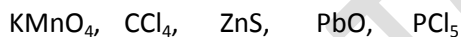
3. What are the numbers of σ (sigma) and Π (pi) bonds in the following structure?



σ (sigma) :

Π (pi):

4. What types of bonds exist (ionic, covalent or both) in the following compounds? (3 pts each, 15 pts total)



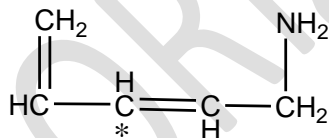
Ionic:

Covalent:

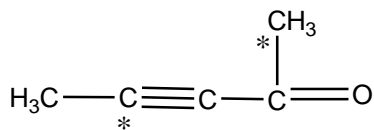
Both:

5. How many sigma and pi bonds are there in the following molecules, and write the types of hybridization in the carbon atoms marked with a star (*).

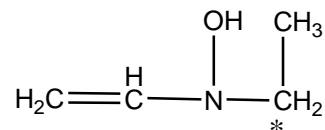
a.



b.



c.



6. Decide following covalent bonds whether **polar** or **non polar**. (2 pts each, 10 pts total)

a. C-C b. P-H c. S=O d. N≡N e. B-Cl