

**Additional Questions**

1. What is the ground state electron configuration for the following:  $Ti^{2+}$   $P^{3-}$   $K^+$
2. Define isoelectronic. Give two ions which are isoelectronic with Krypton.
3. Draw Lewis Dot Structures for the following:

CO $:C \equiv O:$ Linear, Polar	CO <sub>2</sub> $:\ddot{O} = C = \ddot{O}:$ Linear, Polar	N <sub>2</sub> O $:\ddot{N} = N = \ddot{O}:$ Linear, Polar <i>* best see note</i>
HCN H-C≡N: Linear, polar	PO <sub>4</sub> <sup>3-</sup> $\left[ \begin{array}{c} :\ddot{O}: \\   \\ :\ddot{O} - P - \ddot{O}: \\   \\ :\ddot{O}: \end{array} \right]^{3-}$ tetrahedral "ion"	SO <sub>3</sub> <sup>2-</sup> $\left[ \begin{array}{c} :\ddot{O}: \\   \\ :\ddot{O} - S - \ddot{O}: \\   \\ :\ddot{O}: \end{array} \right]^{2-}$ trigonal pyramidal "ion"

4. Classify the type of bond the following pairs would most likely form: (ionic, pure covalent, polar covalent)

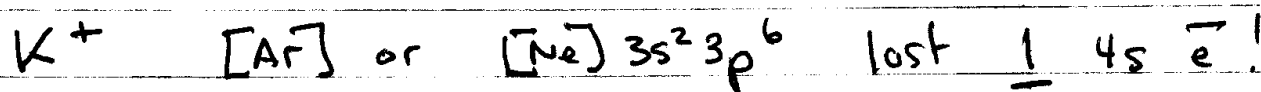
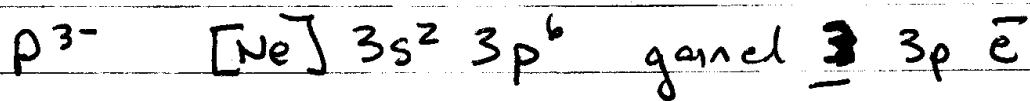
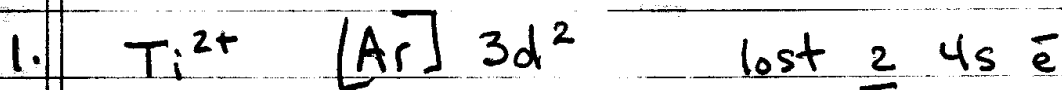
K,P	<u>ionic</u>	P,S	<u>polar covalent</u>
Cl,F	<u>polar covalent</u>	N,N	<u>pure covalent</u>
F,Al	<u>ionic</u>	Cu,S	<u>ionic</u>
O,I	<u>polar covalent</u>	H,S	<u>polar covalent</u>

5. What is the formal charge on S in SO<sub>3</sub><sup>2-</sup>? (Use structure from above.)

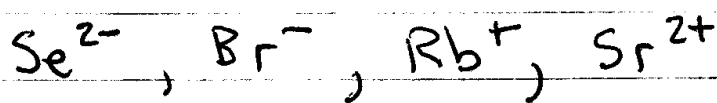
$$S: FC = 6 - 2 - \frac{1}{2}(6) = +1$$

additionally

$$O: FC = 6 - 6 - \frac{1}{2}(2) = -1 \quad (\text{for each oxygen})$$

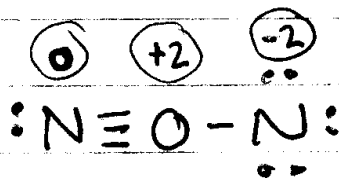
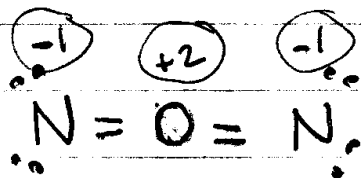
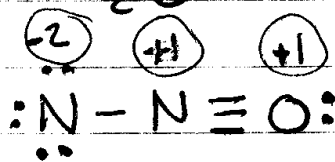
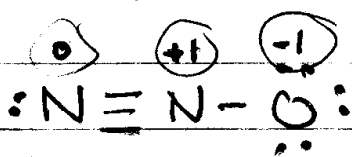


2. isoelectronic = same # of  $\bar{e}$   
 examples of ions ~~is~~ that are isoelectronic w/  $Kr$ :



3. (see sheet.)

\* other possibilities for  $N_2O$



\* Not as good check formal charges

\* Also usually spread out bonds before doubling or tripling

