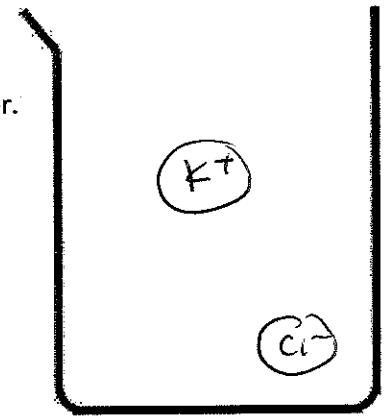
Standard: #3-2

Ionic Properties

Write out the dissolving equation for the following and draw a picture.

1) KCl → $K^+ + Cl^-$



a. Draw relative sizes and create a key/ legend next to beaker.

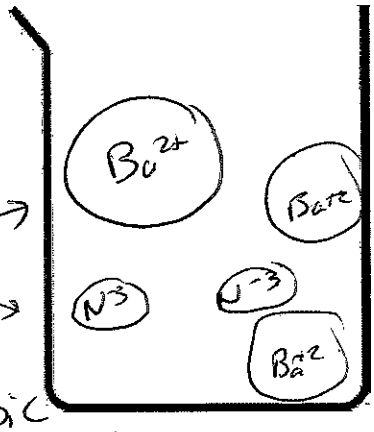
b. Why is one atom bigger/smaller/nearly the same? (Coulomb's law)

similar size

3 energy leves

K^+ [Ar] Cl^- [Ar]

2) Ba_3N_2 → $Ba^{+2} + N^{-3}$



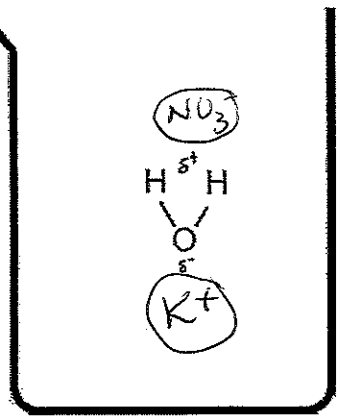
a. Draw relative sizes and create a key/ legend next to beaker.

b. Why is one atom bigger/smaller/nearly the same? (Coulombs law) energy leves 5 2

c. Which has a higher melting point Ba_3N_2 or KCl?
* How would you use coulomb's law to justify?

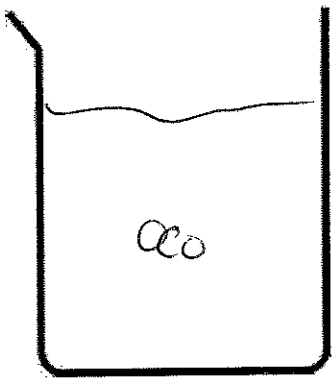
larger charges = more Coulombic attraction = stronger Bonds
Higher Melting points

3) KNO_3→ $K^+ + NO_3^-$
Note: NO_3^{-1} is a molecular ion.



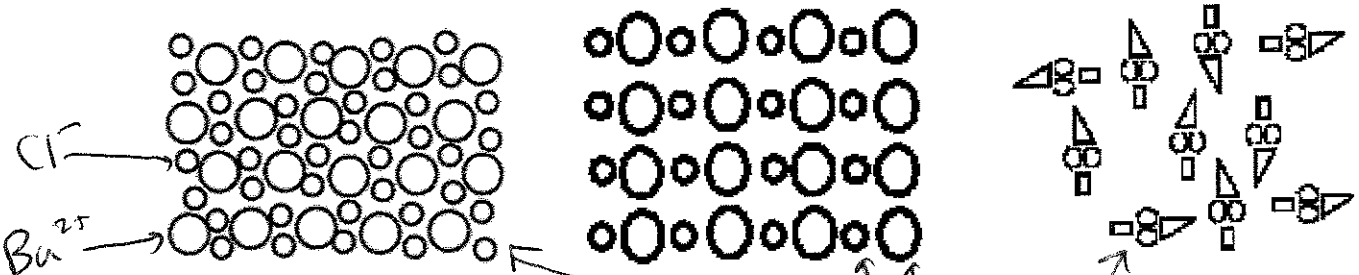
4) CO_2 (this is a covalent substance that looks like O=C=O)

$CO_2 =$ OCO



5) For each drawing indicate if the substance is covalent or Ionic. Write the correct formula for the substance using the symbols.

Formula CO_2 (I/C) Formula CO (I/C) Molecular CO_2 (I/C)



6) One of the models is Barium Chloride.
   a. Label the correct picture $BaCl_2$
   b. Label the picture to identify Ba^{2+} and Cl^-

7) One of the pictures is a covalent substance. Label it Covalent.

8) One of the models is Lithium Bromide
   a. Label the picture LiBr
   b. Label the Li^+ ion and the Br^{-1} ion
   c. Who has a higher melting point LiBr or $BaCl_2$. Justify with coulomb's law.

↑ charge size = ↑ Coulombic attraction

9)
   a. Create an ionic compound with a higher melting point then $BaCl_2$

      BaO (write formula to the left)

   b. Create a model in the box below to model your compound. Make sure you have proportional sizes and quantities.