

Bonding Remediation

Test evaluation

1. #3-3	2. #3-1a	3. #3-4b	4. #2-3	5. #2-1c
6. #2-1b	7. #3-3e	8. #3-3	9. #3-1b	10.

#3-1/#3-2 Ionic Bonding _____/7

#3-3/#3-4 Covalent Bonding _____/12

#2 Atomic structure _____/3

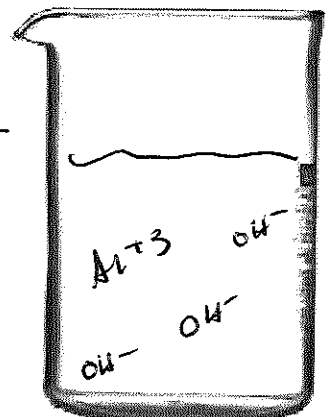
If you do not know
where you are struggling
then you should see
your instructor.

Ionic Bonding

1. Convert the following formulas and names.
 - a. CaCO_3 Calcium Carbonate
 - b. CuO Copper(II) oxide
 - c. Cu_2O Copper(I) oxide
 - d. Aluminum Hydroxide $\text{Al}(\text{OH})_3$
 - e. Iron(III) oxalate $\text{Fe}_2(\text{C}_2\text{O}_4)_3$
 - f. Ammonium sulfate $(\text{NH}_4)_2\text{SO}_4$

2. Aluminum hydroxide dissolves in water

- a. Write the dissolving reaction. $\text{Al}(\text{OH})_3 \rightarrow \text{Al}^{+3} + 3\text{OH}^-$
- b. Draw out a particulate drawing



3. Aluminum Hydroxide will have a (greater/less/equal) melting point compared to Aluminum oxide. Justify

Al⁺³(OH)⁻ → lower charges = less Coulombic attraction
 Al⁺³ O⁻²

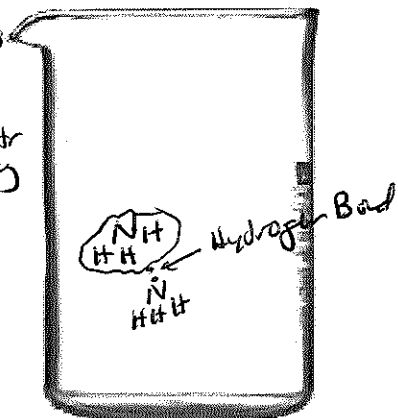
Covalent Bonding

4. Convert the following formulas and names

- a. CO₂ Carbon dioxide
- b. NO Nitrogen monoxide
- c. N₂O₅ Dinitrogen pentoxide
- d. Sulfur Hexafluoride SF₆
- e. Carbon monoxide CO
- f. Carbon tetrachloride CCl₄

5. Ammonia is a common substance in cleaning agents. The formula is NH₃. Answer the following questions.

- a. Create a Lewis structure. $\begin{array}{c} \text{H}-\ddot{\text{N}}-\text{H} \\ | \\ \text{H} \end{array}$
- b. What is the electronic structure? Tetrahedral - 4 e⁻ domains
- c. What is the molecular structure? Trigonal Pyramidal
- d. Is there a polar bond? yes - N-H → large difference of Elect. Neg
- e. Is the substance polar? yes - asymmetrical with Polar Bond
- f. In the beaker to the right draw a sample of liquid ammonia. Label the intermolecular force Hydrogen Bonding



6. Iron (III) oxide is being mined for the eventual production of Iron.

- a. What is the % mass of Iron in the substance above. Fe₂O₃
- b. If a 500g sample, of iron(II) oxide is being mined. How much mass of iron can be eventually be isolated from this sample?

a) Fe_2O_3
 $\downarrow \quad \downarrow$
 $2(55.8) + 3(16)$
 $111.6 = 48$
 $\frac{111.6}{159.6} \times 100 = 69.82\%$

$500\text{g} \times .698 = 349\text{g}$