Chapter 19 WS

A/B Models & Basic Calculations

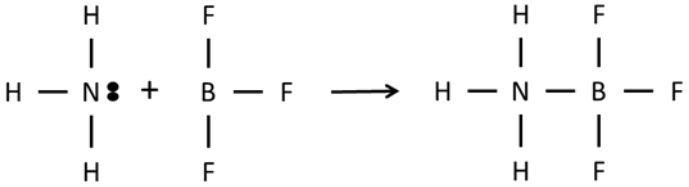
Name: _____

Period: _____ Date: _____

1) What are the basic properties of Acids?

2) What are the basic properties of Bases?

3) Fill in the following table for the 3 different definitions of acids and bases:

Model	Acid	Base	Examples
Arrhenius			$Acid = HX \rightarrow H^+ + X^-$ $Base = XOH \rightarrow X^+ + OH^-$
Bronsted-Lowry			$NH_3 + H_2O \rightarrow NH_4^+ + OH^-$
Lewis			

4) Label each of the following as monoprotic, diprotic, or triprotic acids:

a. H_2SO_4

b. HF

c. H_3PO_4

d. CH_3COOH

e. HNO_3

f. H_2MnO_4

5) What is a conjugate acid?

6) What is a conjugate base?

7) Identify the acid, base, conjugate acid, and conjugate base in the following equation:

$$CH_3COOH + H_2O \rightarrow CH_3COO^- + H_3O^+$$

8) What does amphoteric mean and what chemical is THE example of it?

9) What is the chemical equation for the self-ionization of water?

10) What is the formula for Kw, what is the value of it, and what do the two parts stand for?

11) How can you determine whether a solution is acidic/basic by just the concentrations?
Acidic = Basic =

12) What is the formula for pH and the formula for pOH?

13) When you add the pH and pOH it must always equal what number? Write the equation.

14) Fill in the table with the missing information. Be sure to show work below.

pH	$[H_3O^+]$	pOH	$[OH^-]$	ACID or BASE?
3.78				
	3.89×10^{-4} M			
		5.19		
			4.88×10^{-6} M	
8.46				
	8.45×10^{-13} M			
		2.14		
			2.31×10^{-11} M	