WS 20.1 *Name:*_____*p.*_____

1. Classify each compound as acidic, basic, or neutral.

KOH HNO_3 $Ca(OH)_2$ KCl H_2O

Na_2CO_3 NaOH NaBr H_2SO_3 NH_3

2. a. Draw the dot structure of each molecule b. Identify the type of compound/functional group
c. classify each compound as acidic, basic, or neutral.

C_2H_5OH CH_3COOH C_4H_{10} $C_2H_5NH_2$

3. a. What is the pH of a 0.01 Molar solution of HNO_3?_____
b. What is the ph of a 0.0001 M solution of HCl?_____
c. What is the pH of a 10 Molar solution of HBr?_____

4.a. If an HCl solution has a pH of 5.0, what is the concentration of hydrogen ion in this solution?_____
b. If an HNO_3 solution has a pH of 1.0, what is the concentration of hydrogen ion in this solution?_____
c. If a solution has a pH of -1.0, what is the concentration of hydrogen ion in this solution?_____
d. If a solution has a pH of 0.0, what is the concentration of hydrogen ion in this solution?_____

5. a. What is the pH of pure water?_____
b. Based on the pH, what is the concentration of hydrogen ion in pure water?_____

6. *Notes on the "Autoionization of Water" and the Equilibrium Constant,* K_w

7. Fill in the blanks. SHOW WORK for the first 10 substances!!! (up through coffee)

Substance	pH	Concentration of Hydrogen ion	Concentration of Hydroxide ion	A/B/N?
Cocacola (contains H_3PO_4 and H_2CO_3)		0.0032 M		
Unpolluted Rain	5.92			
Milk of Magnesia (Contains $Mg(OH)_2$)			0.000063 M	
Lime/Lemon Juice (contains $H_3C_6H_5O_7$)			2.5×10^{-12} M	
Blood		3.8×10^{-8} M		
Drano (contains NaOH)	13.14			
Apple Juice		0.00078 M		
Washing Soda Solution (Contains Na_2CO_3)	11.63			
Gastric Juice (from your stomach)			3.3×10^{-13} M	
Coffee			4.8×10^{-9} M	
Bleach (contains NaClO)	12.60			
Vinegar ($HC_2H_3O_2(aq)$)		0.00077 M		
2.0 Molar HCl		2.0 M		
Limewater (contains $Ca(OH)_2$)	10.43			
2.0 Molar NaOH			2.0 M	