

Name \_\_\_\_\_

Period \_\_\_\_\_

**2nd Semester Final Review - Acids and Bases**

1. What is the pH scale and how is it useful?
2. If the concentration of  $[H^+]$  in blood is  $4.0 \times 10^{-8} M$ , is blood acidic, basic, or neutral?
3. What is the pOH of blood?
4. What is the equivalence point and how does it relate to neutralization?
5. In a titration, 34.0 mL of 1.50 M NaOH neutralized 52.0 mL of a Hydrochloric Acid solution. What is the concentration of HCl?
6. What is the difference between a monoprotic, diprotic and a triprotic acid?
7. How do conjugate acid-base pair relate? Provide an example and label all components.
8. Provide an example of a strong and weak acid and how it relates to the  $K_a$ .
9. How are  $K_w$ ,  $K_a$  and  $K_b$  related?

10. Calculate the pH for the following solutions **and** identify as an acid or base

	Ion concentration	pH	Acid or Base
a.	$[H^+] = 6.5 \times 10^{-12}$		
b.	$[H^+] = 3.3 \times 10^{-2}$		

11. Calculate the pH for the following solutions **and** identify as an acid or base.

	Ion concentration	pOH	pH	Acid or Base
a.	$[OH^-] = 3.4 \times 10^{-10}$			
b.	$[OH^-] = 2.6 \times 10^{-4}$			

12. Use the given pH to determine the remaining values.

	pH	Acid or Base	pOH	$[H^+]$	$[OH^-]$
a.	11.80				
b.	4.25				

13. Fill in the table

	Solution	Name	$[H^+]$	$[OH^-]$	pH	pOH	acid or base
a.	$3.2 \times 10^{-4} M HCl$						
b.	$5.6 \times 10^{-2} M NaOH$						
c.	$3.1 \times 10^{-3} M Ba(OH)_2$						
d.	$1.5 \times 10^{-5} M H_2SO_4$						