

Final Exam Review Chapters 16-17
Honors Chemistry

1. What are 3 properties of acids?

low pH
 $[H_3O^+] > 1 \times 10^{-7} M$
 sour taste
 produce H^+ in water

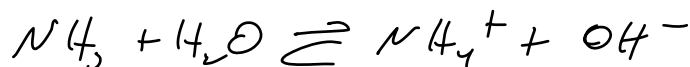
2. What are 3 properties of bases?

high pH
 $[OH^-] > 1 \times 10^{-7} M$
 bitter taste
 slippery feel
 produce OH^- in water

3. What is the conjugate base of HNO_3 ?



4. Write an equation in which NH_3 acts as a Bronsted Lowery base in water.



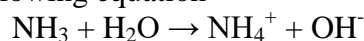
5. What is the conjugate base of

a. HNO_3 NO_3^-
 b. HPO_4^{2-} PO_4^{3-}

6. Which base is stronger in the previous question?

PO_4^{3-} b/c weaker acid

7. Identify two Bronstead-Lowery acids and 2 Bronstead-Lowery bases in the following equation



8. Write a neutralization reaction with hydrobromic acid and magnesium hydroxide.



9. What is the pH of a $1.3 \times 10^{-4} M$ solution of HCl (strong acid)?

$[H_3O^+] = 1.3 \times 10^{-4} M$
 $-\log 1.3 \times 10^{-4}$
3.89

10. What are the $[H_3O^+]$ and $[OH^-]$ of a solution with $pOH=11.8$?

$$10^{-11.8} = \{04^{-3}\} = 1.5 \times 10^{-12} \approx 2 \times 10^{-12} M$$

$$\{[H_3O^+]\} = 6.3 \times 10^{-3} \approx 6 \times 10^{-3} M$$

11. What is the pOH of a solution with a hydronium concentration of $3.4 \times 10^{-3} M$?

$$-\log 3.4 \times 10^{-3} = 2.47 = pH$$

$$pOH = 14 - 2.47 = \underline{11.53}$$

12. If 23.4mL of 0.932M NaOH is used to titrate 27.2mL of HCl, what is the concentration of HCl?

$$(23.4)(0.932) = (27.2)(M_c)$$

$$M_c = \underline{0.802 M}$$

Study these review sheets and your old tests and you should be ready for the exam!!!
I will be available for help after your exam on Monday from 12:30-1:30ish.