1. How does the conductivity of a weak acid compare to the conductivity of a strong acid?

AA strong acid is a strong electrolyte while a weak acid is a weak electrolyte. This rsults in a strong acid being a better conductor of electricity

1. What is the conjugate acid for HSO4-? What is the conjugate base for HSO4-?

H2SO4  SO42-

1. How does the definition of a BrØnsted-Lowry acid and base differ from the definition of an Arrhenius acid and base?

An Arrhenius acid and a BrØnsted-Lowry acid and the same while an Arrhenius base is defined as a hydroxide donor and a BrØnsted-Lowry base is defined as a proton (or hydrogen) acceptor

1. Name the following acids and bases:
2. HCl Hydrochloric acid
3. NaOH Sodium hydroxide
4. HClO2 chlorous acid
5. H2SO4 sulfuric acid
6. HBrO hypobromous acid
7. NH3 ammonia
8. NH4+ ammonium
9. HF hydrofluoric acid
10. HI hydroiodic acid
11. HIO2 iodous acid
12. Consider the following reaction:

HNO2 + HS- ↔ NO2- + H2S

Nitrous acid has a Ka of 4.0x10-4 and hydrosufluric acid has a Ka of 1x10-7. Which side of the reaction is favored (reactants or products) and what statement can you make about the K value for this reaction?

Since Nitrous acid has a larger Ka it will drive the reaction to the products side resulting in a higher concentration of products which means it has a K value greater than 1.

1. Hydroiodic acid reacts with ammonia. Write the balanced chemical reaction. Label the conjugate acid/base.

HI + NH3 🡪 I- + NH4+ CA:NH4+  CB: I-

1. Calcium hydroxide and phosphoric acid go through a neutralization reaction. Write the balanced chemical reaction.

2Ca(OH)­­2 + 3H3PO4 🡪 6H2O + Ca3(PO4)2

1. Potassium hydroxide and bromous acid go through a neutralization reaction. Write the balanced chemical reaction.

KOH + HBrO2 🡪 H2O + KBrO2

1. Review the practice problems on pages 11, 12 and 16.
2. If the pH of a solution changes from 11 to 12, how much does the hydronium concentration change? How much does the hydroxide concentration change?

The hydronium ion will be 10 times less, the hydroxide ion will be 10 times more

1. If the pH of a solution changes from 2 to 1, how much does the hydronium ion concentration change? How much does the hydroxide ion concentration change?

The hydronium ion will be 10 times more, the hydroxide ion will be 10 times less.

1. What is the pH of a solution that has a hydroxide concentration of 8.2x10-3?

-log[OH-]=pOH pOH + pH=14 pOH=2.09 pH=11.91

1. What is the pH of a solution that has a hydronium concentration of 9.7x10-2?

-log[H+]=pH pH=1.01

1. What is the hydroxide ion concentration of a solution that has a pOH of 3.2

[OH-]=10-pOH [OH-]=6x10-4

1. What is the pH of a solution that has a pOH of 11.2?

pOH + pH=14 pH=2.8

1. A solution of hydroiodic acid is titrated with 25mL of a 2M solution of NaOH. If the solution of hydroiodic acid had a volume of 50mL, what was the molarity of the hydroiodic acid?

HI + NaOH 🡪 H2O + NaI

Mol of NaOH=MxL=2x.025=.05mols of NaOH .05 mols NaOHx$\frac{1 mol HI}{1mol NaOH}$=.05mol HI

M=$\frac{mol}{L}$=$\frac{.05mol}{.050L}$=1M