Practice Sheet Acids and Bases Key

1. Write the formula for the following (2 points):
2. The conjugate base of H3PO4 \_\_\_\_H2PO4-\_\_\_\_\_\_\_\_\_\_
3. The conjugate acid of C2H3O2- \_\_\_\_HC2H3O2\_\_\_\_\_\_\_\_\_
4. A 25.00 mL sample of sulfuric acid, H2SO4, solution required 12.06 mL of 0.2675 M sodium hydroxide, NaOH, solution for complete neutralization (8 points).
5. Write the balanced neutralization reaction.

H2SO4 (aq) + 2 NaOH (aq) 🡪 2 H2O (l) + Na2SO4 (aq)

1. What is the molarity of the sulfuric acid?

1. Answer the following questions about black coffee, 5.7 x 10-5 M H+ (6 points).
2. What is the pH?
3. What is the pOH?

1. What is the hydroxide ion, OH-, concentration?

or

1. Is the coffee acidic, basic, or neutral? \_\_\_\_acidic\_\_\_\_\_\_\_\_
2. Write an equation to illustrate the acid-base reactions that will take place between H2CO3 and NH3. Identify the acids and bases.
3. Fill in the chart below: (give concentrations to 3 sig figs and pH and pOH to 3 places after the decimal.)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [H3O+] | [OH-1] | pH | pOH | Acidic or basic |
| 2.58 x 10-11 M | 3.87 x 10-4 M | 10.587 | 3.412 | basic |
| 4.63 x 10-9 M | 2.16 x 10-6 M | 8.334 | 5.666 | basic |