Grossmont College Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemistry 142, Spring 2015

Practice

1. For each of the following, write and label the formula for the conjugate acid and the conjugate base.

|  |  |  |  |
| --- | --- | --- | --- |
| compound | OH− | HClO2 | NH3 |
| Conjugate acid |  |  |  |
| Conjugate base |  |  |  |

1. List the strong acids: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. A student measures the pH of a 0.100 M solution of an unknown mono-protic weak acid. The pH is 1.95. What is the Ka of the acid and percent dissociation?
3. Calculate the pH of a 0.050 M basic solution of ethylamine (C2H5NH2, Ka=1.56 x10–11)
4. For the reaction NO(g) + NO2(g) + H2O(g) ⮀ 2 HNO2(g), occurring at 28oC, [NO]*i* = [NO2]*i* = 44.1 torr and [H2O]*i* = 17.5 torr. If the total pressure at equilibrium is 95.6 torr (20 points).

a. What are the equilibrium pressures of all species?

b. Calculate Kp for the reaction?