**Dougherty Valley HS AP Chemistry**

**QUIZ YOURSELF #2**

**Acid Base Equilibrium Review**

THE pH of SALT SOLUTIONS

**Name: Date: Period: Seat #:**

1. Consider the weak acid, HC2H3O2. Ka = 1.8 x 10-5

a. Write the acid dissociation equation for acetic acid.

b. What is the conjugate base of acetic acid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. A base is a proton \_\_\_\_\_\_\_\_\_\_\_ (donor/acceptor).

d. Finish this equilibrium equation:

C2H3O2 + H2O ⮀

e. Write the Kc expressions for the following reactions:

|  |  |  |
| --- | --- | --- |
| The equation in “a”, the Ka | The equation in “d”, the Kb | Kw |
|  |  |  |

f. What is the relationship among these three expressions?

g. Calculate the value of the Kb for the acetate ion.

h. A 0.10 M solution of sodium acetate would have a pH \_\_\_\_\_\_\_\_\_\_ (>7, 7, <7).

i. Calculate the [OH] for a 0.10 M solution of sodium acetate. [**7.5 x 10-6 M**]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | C2H3O2 | H2O(*l*) | ⮀ | HC2H3O2 | OH |
| Initial |  |  |  |  |  |
| Change |  |  |  |  |  |
| Equilibrium |  |  |  |  |  |

j. What is the pOH of the solution? \_\_\_\_\_ What is the pH of the solution? \_\_\_\_\_

2. Cyanic acid HOCN has a Ka = 3.5 x 104, what is the Kb for the cyanate ion OCN

3. Calculate the pH of a 0.35 M solution of potassium cyanide. Ka for HCN = 4.0 x1010. [**pH = 11.47**]