**Dougherty Valley HS AP Chemistry**

**WORKSHEET #2**

**Acid Base – salts identification**

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

Classify the following salts as acidic, basic or neutral. Remember (Kw = Ka x Kb)

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| **Salt** | **Acidic, basic, or neutral** | **Salt** | **Acidic, basic, or neutral** |
| [1] Ba(ClO4)2 |  | [12] K2CO3 |  |
| [2] NH4NO2  Ka for NH4+ = 5.6 x10-10; Kb for NO2- = 2.2x10-11 |  | [13] CsOH |  |
| [3] AgOH |  | [14] HClO4 |  |
| [4] H2CO3 |  | [15] NH4C2H3O2 |  |
| [5] NH4Cl |  | [16] NaClO |  |
| [6] Ca(NO3)2 |  | [17] KClO4 |  |
| [7] NaNO2 |  | [18] NH4Br |  |
| [8] Zn(NO3)2 |  | [19] NH4F |  |
| [9] K2CO3 |  | [20] KC2H3O2 |  |
| [10] Fe(ClO4)2 |  | [21] NaF |  |
| [11] NH4C6H6COO  Ka for NH4+ = 5.6E-10; Ka for C6H6COOH = 6.5E-5 |  | [22] CH3NH3NO2  Kb for CH3NH2 = 4.4E-4; Kb for NO2 = 2.2E-11 |  |

* For all Acidic and Basic solutions, write the reaction and balance it, that is causing the solution to be acidic or basic. Be sure to include the problem number from above.

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Show all work, the chemical reaction taking place balanced, box each answer in the process throughout the problem and final answer

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| 1. What is the pH of a 0.100 M solution of sodium acetate? Kb = 5.65 x 10-10. **8.876** |
| 1. What is the pH of a 0.0500 M solution of KCN? Kb = 2.1 x 10-5. **11.01** |
| 1. Find the pH of a 0.30 M solution of sodium benzoate, C6H5COONa. The Kb for C6H5COO¯ (benzoate ion) is 1.55 x 10¯10. **8.83** |
| 1. Find the pH of a 0.20 M solution of sodium propionate (C2H5COONa), where the Ka of propionic acid = 1.34 x 10¯5. **9.09** |
| 1. What is the pH of a 0.0500 M solution of ammonium chloride, NH4Cl. Ka = 5.65 x 10-10. **5.274** |
| 1. What is the pH of a 0.100 M solution of methyl ammonium chloride (CH3NH3Cl). Ka of the methyl ammonium ion (CH3NH3+ = 2.70 x 10-11. **5.784** |
| 1. Given the pKa for ammonium ion is 9.26, what is the pH of 1.00 L of solution which contains 5.45 g of NH4Cl (the molar mass of NH4Cl = 54.5 g mol-1.) **5.13** |