**5.3 HONORS CLASS WORKSHEET – STRONG AND WEAK ACIDS**

1. **strong and weak acids**

Strong Acid: ………………………………………………………………………………………………………………………………

Example: HCl Equation: ……………………………………………………………………………………

Weak Acid: ……………………………………………………………………………………………………………………………….

Example: acetic acid – HC2H3O2 Equation: …………………………………………………..……………………

1. **strong and weak bases**

Strong Base: ………………………………………………………………………………………………………………………………

Example: NaOH Equation: …………………………………………………………………………

Weak Base: ……………………………………………………………………………………………………………………………….

Example: NH3 Equation: …………………………………………………..……………………

Example CO32- Equation: …………………………………………………..……………………

Bases which are insoluble or only slightly soluble in water are also classified as weak:

Eg Ca(OH)2 Equation: …………………………………………………..……………………

1. **Neutralizing strong and weak acids**

0.01 moles of a strong acid (HCl) will require ………………… moles of OH- to neutralise it

0.01 moles of a weak acid (HC2H3O2) will require ………………… moles of OH- to neutralise it

Reason: Equation 1: ………………………………………………………………………………

Equation 2: ………………………………………………………………………………

…………………………………………………………………………………………………………………………………………………….

1. **Differences between strong and weak acids (and bases)**
2. **Enthalpy of neutralization**

All strong acids have the same enthalpy of neutralization:

Equation for neutralization of HCl/HNO3:

…………………………………………………………………………….. ΔH = ………………………………..

Equation for neutralization of HC2H3O2:

1. …………………………………………………………………………….. ΔH = ………………………………..

2. …………………………………………………………………………….. ΔH = ………………………………..

Overall: ΔH = ………………………………..

1. **pH**

0.100 mol/L HCl is 100% dissociated so H+ concentration = …………………. mol/L and pH = …………

0.100 mol/L HC2H3O2 is 1% dissociated so H+ concentration = ………………. mol/L and pH = …………

0.100 mol/L NaOH is 100% dissociated so OH- concentration = …………. mol/L and pH = …………

0.100 mol/L NH3 is 1% dissociated so OH- concentration = …………………. mol/L and pH = …………

1. **Conductivity**

Which solution will have the higher conductivity: 0.1 mol/L HCl or 0.1 mol/L HC2H3O2? Why?

1. **Reactivity**

Complete the following equations:

1. MgO + 2HCl 🡪 ……………………………………………………………………….
2. MgO + HC2H3O2 🡪 ……………………,,……………………………………………

Which reaction will be faster, and why?