

AP Chemistry – Aqueous Reactions – 34

Name _____ Per ____

1. Specify how each of the following strong electrolytes ionizes or dissociates into ions upon dissolving in water:

- (a) MgI_2
- (b) $\text{Al}(\text{NO}_3)_3$
- (c) HClO_4
- (d) $(\text{NH}_4)_2\text{SO}_4$

2. Predict whether each of the following compounds is soluble in water:

- (a) $\text{Ni}(\text{OH})_2$
- (b) PbSO_4
- (c) $\text{Ba}(\text{NO}_3)_2$
- (d) AlPO_4
- (e) $\text{AgC}_2\text{H}_3\text{O}_2$

3. Classify each of the following as a strong or weak acid or base:

- (a) CsOH
- (b) H_3PO_4
- (c) $\text{HC}_7\text{H}_5\text{O}_2$
- (d) H_2SO_4

4. Classify each of the following aqueous solutions as a non-electrolyte, weak electrolyte or strong electrolyte:

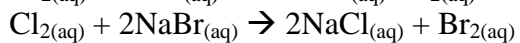
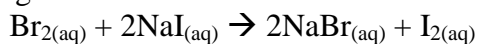
- (a) HBrO
- (b) HNO_3
- (c) KOH
- (d) CH_3COCH_3
- (e) CoSO_4
- (f) $\text{C}_{12}\text{H}_{22}\text{O}_{11}$

5. Write a balanced molecular equation **and** a net ionic equation for the reaction that occurs when:

(a) solid calcium carbonate reacts with an aqueous solution of nitric acid

(b) solid iron(II) sulfide reacts with an aqueous solution of hydrobromic acid

6. (a) Use the following reactions to prepare an activity series (ease of reduction and ease of oxidation) for the halogens:



(b) Relate the positions of the halogens in the periodic table with their locations in this activity series.

7. Calculate ΔG° for each of the following reactions. In each case indicate whether the reaction is spontaneous under standard conditions.

