

## Quantitative Analysis Assignment #1

### The Analytical Process and Analytical Measurements

- 1) List and describe the steps performed during a chemical analysis
- 2) Concentrated hydrogen peroxide ( $\text{H}_2\text{O}_2$ , FW=34.01 g/mol,  $\rho=1.19$  g/mL) is a 30.1 wt % solution. How much of the concentrated peroxide solution do you need if you want to prepare 250 mL of a dilute 0.1 M solution of hydrogen peroxide?
- 3) You're going to analyze a mineral sample that weighs 111.515 g for the silver (Ag, AW=107.87 g/mol) content. You dissolve the mineral sample in acid solution. To that solution, you add excess chloride ion to form the solid precipitate, silver chloride ( $\text{AgCl}$ , FW=143.32 g/mol). After drying, the solid precipitate obtained weighs 7.7  $\mu\text{g}$ . A) What mass of silver was present in the mineral sample? B) What was the concentration of silver in the mineral sample in parts-per-billion? C) A subsequent analysis on a similar mineral sample showed that a significant amount of mercury was present. Mercury also precipitates with chloride from solution. If mercury caused the method to detect increased "silver" concentration, what term would describe that phenomenon and how might you solve it?