Pre-lab exercise KEY for Separation of a mixture Lab
(Complete and check answers before coming to lab)

1. Which part of experiment needs to be done in the fume hood? Explain why.

Sublimation of ammonium chloride.

We don't want to breathe the gaseous ammonium chloride generated in the process.

2. A solid mixture of ammonium chloride, salt, and sand has a mass of 23.54 g before heating. After the heating, the mass is 18.56 g.

   A) Calculate the difference between these two mass measurements.

23.54 g
- 18.56 g
4.98 g

   B) Which physical process causes this difference?

Sublimation

   C) What components of the mixture are present AFTER the heating?

Salt and Sand.

3. How many mass measurements are needed in order to calculate the percent of all three components of the mixture?

FIVE! (It is a good idea to review each one before coming to lab)

4. A 6.04 g sample of a charcoal and sodium chloride mixture was separated by dissolving the sodium chloride in water and filtering out the charcoal. The charcoal was dried. The filtrate (sodium chloride solution) was then heated until all the water had evaporated, leaving the dry sodium chloride.

   1). If 4.19 g of charcoal was separated out, what is its percentage in this mixture?

$$\frac{4.19\text{ g}}{6.04\text{ g}} \times 100 = 69.4\%$$

   2). Given the information in question 1), how many grams of sodium chloride would you expect to obtain when you evaporated the filtrate to dryness?

6.04 g - 4.19 g = 1.85 g