

CHEM LAB Exam

To do well on this exam, you need to know how:

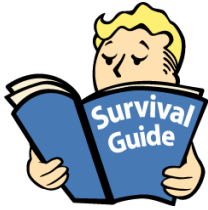
1. To follow a procedure for a calorimetry experiment that you have not done before and obtain accurate measurements. It will NOT involve Hess Law, but from the data you will be able to calculate some unknown value.
2. To record measurements with the correct number of significant figures and report the uncertainty for ΔT .
3. To use $Q = mc \Delta T$ and other formulas given to you individually in part 2.
4. To report the final answer for the unknown with the correct number of significant figures.
5. To calculate the % error associated with the mass measurement and the % error associated with ΔT .

Review Questions for Chem Exam

1. a) What kind of things should you be careful about in doing a calorimetry exam regarding the following and why:
 - (1) volume of any aqueous solutions
 - (2) mass of any solids
 - (3) lid
 - (4) stirring
2. If the lines on a thermometer go up one degree at a time, and the liquid's meniscus seems to be exactly at 0 how do you report your measurement with the correct number of decimals and uncertainty?
3. a) Foods are a mixture of many compounds and ions, so the ΔH is not reported on a per mole basis but on a ***per gram*** basis.

If burning 3.00 g of food X causes the temperature of 50.0 ml of water to climb from 21.7 °C to 73.7°C, how much heat does the water absorb on a per gram of food of X-basis? How much heat in kJ is released by the food on a per gram basis?

4. How many significant figures does the final answer have? Did you base the answer on T sig figs? Or on ΔT 's?



5. Each of the above temperature readings had an uncertainty associated with it. a) Calculate the uncertainty associated with the ΔT .

b) Calculate the % error associated with the ΔT .

c) If you use 1.00 grams instead of 3.00 g of food, does it have any impact on the error? Show why.