

# Chemistry 2720 Fall 2005 Quiz 1

Name: \_\_\_\_\_

**Marks for this quiz: 10.** Answers will be graded for clarity and completeness as well as scientific content. Write your answers on the front and back of this sheet.

Suppose that you were given a liquid sample and asked to measure its specific heat capacity (per unit mass). How would you proceed? You might be tempted to use a similar experiment to the one demonstrated in class, but it would be a bad idea to pour your liquid into another liquid of known heat capacity since there is generally a thermal effect, called enthalpy of mixing, when you mix two liquids. Furthermore, the heat capacity of the mixture is not an average of the heat capacities of the individual liquids, so measuring the heat capacity of the mixture wouldn't tell you the heat capacity of the original sample. Lay out your answer in the form of a procedure which you or a coworker could follow to make the measurements and calculate the heat capacity. Think carefully about the properties of the materials needed in your procedure. For instance, if you need a test tube, you can't assume that its heat capacity is zero. You may therefore need to calibrate some equipment *before* you do your experiment.