Density Report Rubric – Chemistry 30A

Point allocations are outlined for each section of the density Report.

Section 1 – Introduction Section

5 points: a) Purpose statement is clearly defined for the experiment (no spelling

errors present or just one error is OK).

b) Definition of density given (formula)

c) How will density be determined?

d) How can density information be used to explain such phenomena as steel and cement ships that are capable of floating in water?

e) A discussion of how the results of density data determined in the experiment will be used.

4 points: If any one of the above points is missing or poorly written

3 points: If any two of the above points is missing or poorly written

1-2 points: If this section is poorly written in general and only one or two of the above points are addressed. Many spelling errors present.

Section 2 – Experimental Section

5 points: a) Experimental procedure is written in complete sentences and follows a logical progression

b) A table listing of all of the chemicals and equipment used

c) The table must have a title and a number associated with it: Table #1

d) Correct spelling

4 points: Everything from above is correct except one item is not done correctly. For example: The table is not labeled correctly, a few spelling errors. Procedure description is not complete.

3 points: A number of spelling errors, poorly constructed table and equipment and chemical lists are incomplete. Procedure section is missing a few major parts.

1-2 points: Many spelling errors, no table, very incomplete list of chemicals and equipment. Procedure section is very incomplete or missing altogether.

Section 3 – Results Section

5 points: A well-written section that includes results in tabulated form, calculations are shown separately and the results of the calculations are shown in the tables (do not show the actual calculations in the tables but only record the results of the calculations in the tables). Tables are properly labeled. Two different methods are shown for the determination of volume. Average the density calculations and show this averaged value in the appropriate table. Spelling is correct. Organization of the results is easy to follow. All values are properly labeled with their appropriate units.

4 points: Organization of results is relatively easy to follow but one or two calculations are incorrect and/or not labeled with proper units. Tables(s) are incorrectly labeled. The two density values that were determined from two different methods for each object measured were not averaged. A few spelling errors.

3 points: Organization of data is not that easy to follow. Some calculations are incorrect and the tables are incomplete. A number of spelling errors are present. Improper units used with values recorded and/or calculated values.

1-2 points: Incomplete data recording. Tables are poorly constructed or missing. There are many spelling errors. Calculations missing or most are incorrect. Density determinations are not averaged and not recorded in the table(s).

Section 4 – Discussion and Conclusion Section

5 points: A complete discussion of the results. Do not show the calculations and the tables from the Results section again in this section. A discussion of the two different density determination methods for the objects that were measured is clearly done. How close were the density values? The density of the objects measured to the density of water is discussed. Are your objects more or less dense than water? Did you actually observe this during the experiment? If your object was a pure substance, such as a metal, that has a density that you could find in a text or on-line, then what would you expect this object to do in pure water (sink or float)? What did you actually observe? No spelling errors or only one or two.

4 points: Discussion was good but a few points missing. If the object was a pure substance that has a density that could be found in a text or on-line and you did not do this. Do not re-write any calculation in this section. Only three or four spelling errors.

3 points: Discussion was just fair. Five or more spelling errors were present. There was no discussion about the density of water and the objects that were measured. There was no discussion about the density of the objects and the actual experimental observations. No mention about the literature value (the value obtained from a text) if your object was a pure substance.

1-2 points: Very little discussion and it was poorly written. No comparison of the densities of the objects to the density of water. Many spelling errors were present. Logic was incorrect about densities.