Grading Rubric for non-Formal, Technique Experiment Reports

Prelab – 5 points

**Full credit** – All aspects are included. Title of experiment, a short purpose, TOR, in-their-own-words procedural outline. **TOR has all pertinent physical properties**, i.e., MW, BP, density, known hazards, etc. Purpose is clear and to the point. Procedure is clear and could be used in the absence of the handout, but not a direct copy of handout.

**4 points** – Something is wrong. One or more of the following: Missing title, purpose does not fit or is missing, 1-2 missing pieces of data in TOR, procedure either lacks a step or two or is wordy, but not a direct copy.

**3 points** – More is wrong. 3-4 missing pieces of data in TOR, procedure lacks a few steps or is becoming very wordy, but still not a direct copy of the handout.

**2 Points** – Even more is wrong. >4 missing pieces of data in TOR, procedure becoming a direct copy of handout

**1 Point** – Procedure is a direct copy of the handout or very close to it.

**0 Points** – Missing prelab entirely before lab begins. Give 1/5 for doing it and then returning.

In and Out of Lab Notebook Entries – 10 Points

**Full Credit** – Organized and neat, easy to read. Entries are clear and anything with the procedure is done while working (before you sign). Includes UK #, weighings, MPs, BPs with units (if applicable). Observations are clearly noted. Symbols and shorthand are ok (@, etc.). Experiment dated and any out-of-lab things dated or morning hours dates are included.

**8 – 9 Points**: Somewhat unorganized or not as easy to read. Missing units on BP/MP. Masses of things still included.

**6 – 7 Points**: Even more unorganized, becoming harder to read. Missing BP, MP or masses of items.

**4 -5 Points**: Almost undecipherable. Observations minimal, but still some present.

**1 – 3 Points**: Undecipherable. No observations. Can’t read at all. Completely unorganized. Missing dates of performed experiments or MPs in morning hours.

**0 points**: Nothing present. should be a rare case unless the report is not turned in.

Lab Technique – 5 Points

Keep a note of this. Messiness, asking the same question over and over again, has to constantly be asked to put on goggles or to work in the hood.

Results and Discussion – 20 Points (10 points for results portion and 10 points for discussion portion)

**Results Portion**: **If unknown(s) incorrectly identified, CREDIT IS NOT TAKEN AWAY IN THIS SECTION as it is simply a result.**

**Full Credit** – All experimentally necessary results simply restated (product mp/bp, percent yields, mass, characterization methods (not actual data yet), in tabular form that is easy to read with appropriate column headings. Identification of unknown(s) stated in table.

**Minus two points for each missing piece of physical data, including not putting results into a table, no matter how small the table is.**
Discussion portion: 2 points deducted for each unknown* incorrectly identified.

**Full Credit** (10 Points) – *All unknowns correctly identified.* Reaction or procedure discussed using correct chemical terminology. For example, "In this lab the melting points of two unknowns and the three known compounds x, y and z were to be determined." % recoveries or yields, whichever is applicable, weights of compounds reported correctly. Results summarized, interpreted well and are easy to read. Spectra interpreted and discussed appropriately. No use of first person.

**7 - 9 Points** – One unknown incorrectly identified. Reaction or procedure not discussed or is very minimal. For example, "Melting points were determined" is not adequate. Some use of first person (I, me, etc.). Purity, yields, recoveries, etc. mentioned but inadequately discussed. Results are easy to read but unnecessarily wordy. Spectra interpreted, but some interpretation is incorrect or not fully discussed. First person some of the time.

**4 – 6 Points** – A lot missing. Very little discussion of results. Very little mentioned or discussion on purity, yields, recoveries. Incomplete physical data of products. Some interpretation of spectra but way inadequate. First person predominates.

**2 – 3 Points** - Extremely inadequate. No, or very little discussion of results or purity, or discussion/interpretation of results.

**1 Point** – No post lab turned in at all.

* For the alcohol, aldehyde and ketone experiment, an incorrectly identified unknown is automatic 5 points off.

Answers to Post-Lab Questions – 10 Points equally distributed.