Appendix #1

Guidelines for measuring an UV-Vis spectrum using the HP8452 diode-array spectrophotometer

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1. At the main menu of the HP89532A software, select "*General Scanning*" from the program selector. Check that the parameters are as follows, and consult your TA if they are set differently:

- Sample Input: Manual
- Display Mode: Overlay Spectra
- Integration Time: 1.0s
- Data Type: Absorbance
- Acquisition Range: 360-550nm

2. First, a cuvette filled with distilled water must be scanned as a blank to provide a spectral background. **Never touch the clear sides of the cuvette since it will always be in the path of the light beam! Keep the exterior clean and dry!**

3. Place the capped cuvette in the holder and push the black lever down to lock it. Click on "*Meas. Blank*." After 5 seconds, the blank scan will appear as a very noisy line. This is not a problem since the scale shown here is very small (auto-scaling). Click on "*SampleInfo*," and enter the appropriate information. Note that the background spectrum is stored in Register A.

4. Unlock the cell holder and remove the cuvette used to take the blank. Insert a capped plastic cuvette filled with the LB1 $K_3Fe(CN)_6$ solution (see the description for Day #1). Click on "*Meas. Sample*" after which the spectrum will appear on the screen. Then click "*SampleInfo*" and choose an appropriate name, etc. Choose "*Rescale*" if necessary. This spectrum will be stored in Register B.

5. Click on "*Hardcopy*," and select "*PrintSpectra*." Wait until the plot is printed on the HP PaintJet printer. To print your spectrum in "tabulated" format, you must first "activate" only the register where your spectrum (say B) is stored and "deactivate" all other registers. Otherwise, unnecessary printing occurs as all other registers are also printed. Click on "*Registers*," use the up and down keys to select the register to be "deactivated," and press "*F1*." The "*" in column two will disappear to indicate that that register is no longer active. Repeat this process until all appropriate registers have been deactivated. Then, click on "*Hardcopy*" followed by "*Tabulate*."

6. Repeat steps 4 and 5 for each of the remaining four $K_3Fe(CN)_6$ solutions: LB2 through LB4. Each time, the spectrum will be stored in the next empty register.

7. When done, click "*Return*" followed by "*Exit*" and then press the "*Return*" key.