## Experiment #3: Atomic Spectroscopy

Student Name:		Student Name:		
Pre-Lab - 13 pts. Introductory Statement	Pts Possible Pts Earned 3	Pre-Lab - 13 pts. Introductory Statement	Pts Possible 3	Pts Earned
Pre-Lab Questions Question 1	2	Pre-Lab Questions Question 1	2	
Question 2	2	Question 2	2	
Question 3	2	Question 3	2	
Question 4	1	Question 4	1	<u> </u>
Question 5	3	Question 5	3	·
<b>Data Collection</b> - 4 pts.  Data Section should be appropriately form to the start of lab. All necessary data are		<b>Data Collection</b> - 4 pts.  Data Section should be appropriately for to the start of lab. All necessary data are		
Calculations - 29 pts.		Calculations - 29 pts.		
Helium spectral line identification	1	Helium spectral line identification	1	
Spectroscope calibration graph - Draft	3	Spectroscope calibration graph - Draft Spectroscope calibration graph - Final	3	
Spectroscope calibration graph - Final Estimate wavelengths of Balmer series	4 2	Estimate wavelengths of Balmer series	2	
Predict transitions (n <sub>high</sub> →n <sub>low</sub> )	2	Predict transitions (n <sub>high</sub> →n <sub>low</sub> )	2	
Calculate wavelengths of Balmer series	3	Calculate wavelengths of Balmer series	3	
Calculate energy of emitted photon	3	Calculate energy of emitted photon	3	
Calculate n <sub>high</sub> for each transition Calculate energy of each n level	3 2	Calculate n <sub>hiqh</sub> for each transition Calculate energy of each n level	2	
Calculate $\Delta E$	2	Calculate $\Delta E$	2	
Energy diagram - Summary of results	4	Energy diagram - Summary of results	4	
Post-Lab - 7 pts.		Post-Lab - 7 pts.		
Question 1	3	Question 1	3	
Question 2	2	Question 2	2	
Question 3	2	Question 3	2	
Results and Conclusions - 4 pts.	4	Results and Conclusions - 4 pts.	4	
<b>TA Discretionary Points</b> - 3 pts.  Promptness, safety, attitude, cooperation	3	<b>TA Discretionary Points</b> - 3 pts.  Promptness, safety, attitude, cooperation	l <u>3</u> n, lab-cleanup, e	etc.
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Experiment #3: Atomic Spectroscopy

Total 60 Up to 3 pts. max deduction for poorly organized/poor quality lab notebook. Up to 3 pts. max deduction (for the entire lab report) for incorrect sig. figs.

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Total 60