

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

Date: \_\_\_\_\_

Partner: \_\_\_\_\_

### The Bohr Model of the Atom

Your nicely formatted Excel worksheet should be placed in my inbox on \\files (\\files\Inbox\Physics\Pogo\OpticsLab; only one Excel document per group; it should be titled "Spectrum-Smith&Jones.xls"), assuming that you and your partner are named Smith and Jones, respectively. Please use .xls format (NOT .xlsx format).

<b>Part 1: Laser Diffraction</b>			
	<i>units</i>	<i>Value</i>	<i>Uncertainty</i>
<i>slope of <math>m\lambda</math> versus <math>\sin\theta</math></i>	m		
<i>grating spacing <math>d</math></i>	m		
<b>Part 2: Hydrogen (H) Lamp</b>			
	<i>units</i>	<i>Value</i>	<i>Uncertainty</i>
<i>slope of <math>\left(\frac{m}{d \sin \theta}\right)</math> versus <math>\left(\frac{1}{n_{upper}^2}\right)</math></i>	$m^{-1}$		
<i>intercept of <math>\left(\frac{m}{d \sin \theta}\right)</math> versus <math>\left(\frac{1}{n_{upper}^2}\right)</math></i>	$m^{-1}$		
<i>Rydberg Constant using this slope</i>	$m^{-1}$		
<i>Rydberg Constant using this intercept</i>	$m^{-1}$		
<i>Average Rydberg constant of all lines</i>	$m^{-1}$		
<i>Accepted Rydberg Constant</i>	$m^{-1}$		

In the space below, comment on your results. How does your grating spacing from part 1 agree with the manufacturer's value? How does your measured Rydberg constant agree with the accepted value? Can you think of any reasons for discrepancies?