Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ date \_\_\_\_\_\_\_\_\_\_ hour \_\_\_\_\_\_\_\_\_\_

CW 6: Atomic Emission Spectra

Complete the following as you progress through the PowerPoint.

1. What is electromagnetic radiation?
2. How does a spectrum form?
3. Why is the spectrum formed by a helium lamp different than the spectrum formed by a white light bulb?
4. Can you identify the element(s) present in the unknown? Justify your answer and explain how you came to it.
5. Why did Bohr choose to study hydrogen?
6. What happens to the distance between energy levels as they increase?
7. Draw and label the Bohr model of the atom. Summarize the basics.



1. Explain how the picture relates to atoms and the Bohr model.
2. Compare the ground state and the excited state.
3. Explain how electrons move between energy levels.
4. Only certain frequencies of light are visible to the human eye. List all of the visible energy transitions found in hydrogen and the colors that correspond.
5. Compare the energy transitions in the ultraviolet and infrared frequencies. Then circle the correct words in the sentence below.

|  |
| --- |
| The energy given off during an infrared transition is too (small/large) to be seen by the human eye, whereas the energy given off during an ultraviolet transition is too (small/large) to be seen by the human eye. |

1. What is a flame test? Explain.

#### Flame Test Pre-Lab

Video Link: http://www.youtube.com/watch?v=65aWaDGNfVE

* Watch the video.
* In your groups, write the purpose, procedure (step by step, numbered; spare no details!), and materials needed for the lab.
* NOTE: We will not do it exactly like in the video. Observe the materials we will use and adjust your procedure accordingly.