Line Spectra and Bohr Model of the Atom

1. Draw a labeled diagram of the spectroscope used in class. This should be about one-half page in length. Include the labels: body, input slit, diffraction grating, screen. Include in the diagram a ray of white light and how it will split into colours by the time it reaches the screen.

2. Draw a labeled diagram of a hydrogen atom according to the Bohr model of the atom. Include the labels: nucleus, electron, n=1, n=2 etc up to n=5, and ground state.

3. Where is the ground state of the atom? What does is mean for an electron when it is in the ground state?

4. When an atom is excited by heat, electricity or the correct colour of light, what happens to an electron that is in the ground state?

5. How is a photon of light produced by and excited atom?

6. Why are lines observed rather than a continuous spectra for any given atom? How does this relate to the energy vs colour relationship for light?