Lab Chemistry A- Study Guide

Quantum Model of the Atom and Electron Location

Instructions: For this study guide, please insert at least 2 pictures, 2 video links & answer 3 questions with actual text

A. Quantum Atomic Model

1. What did old models of the atom fail to explain?

2. Can you describe how light is both a wave and a particle?

3. What happens in the atom that produces the many colored spectra we saw in class?

4. Can you calculate wavelength, frequency or the energy of light given two of the three?

5. What does the **Heisenberg Uncertainly Principle** state?

6. What are the similarities and differences between Bohr's model of the atom and the new atomic model?

7. **Orbitals**
    a. Can you list each orbital type's name and how many orbitals there are for each type as well as how many total electrons can fit in each?

8. What does the **Aufbau Principle** dictate must happen as electrons fill orbitals around an atom?

9. How are orbital notations and electron configurations used to give the location of electrons around a specific atom?
    a. How does **Hund's Rule** apply to the above?