

Transparency Worksheet**Energy Levels of the Hydrogen Atom and Orbital Sequencing**

Name _____

Class _____ Date _____

1. Explain what is meant by an *energy level*. _____

2. Explain how to determine the number of orbitals present in each energy sublevel. _____

3. How do the orbitals of hydrogen differ from the orbitals of all of the other atoms? _____

4. (a) What happens when two electrons occupy the same orbital? _____

(b) What is the name of this concept? _____
(c) Write the symbols for one electron in an orbital and for two electrons in an orbital. _____

5. Describe the steps to follow in writing electron configurations. _____

6. Electron configurations are always written in the atom's _____
7. In writing electron configurations by the shorthand method, the sum of the superscripts equals _____

Critical Thinking

8. Draw an orbital diagram and write the electron configuration for the following: oxygen, bromine, Mg^{2+} , iron, krypton, Cl^- . Use the back of this worksheet for your diagram.