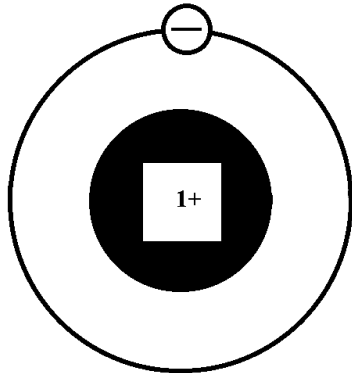
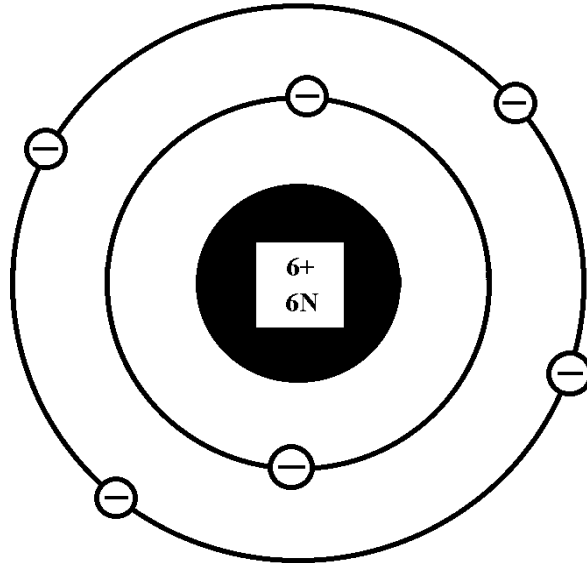


Directions: Complete the following diagrams and questions about the basic structure of atoms and a type of chemical bonding referred to as covalent bonding.

1. Fill in the blanks under the first two atomic diagrams.

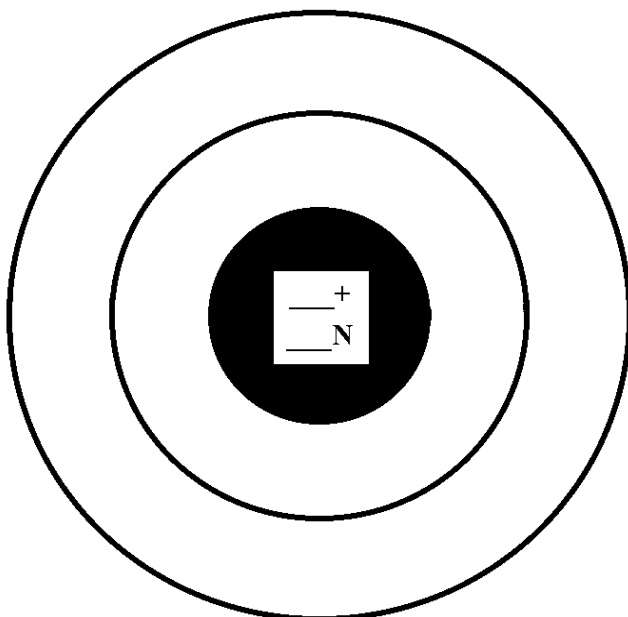


Atomic Number _____
 Atomic Mass _____
 Name of Atom _____
 Symbol _____



Atomic Number _____
 Atomic Mass _____
 Name of Atom _____
 Symbol _____

2. Complete the third atomic diagram. Give the name and symbol of the element. Use a Periodic Table of the Elements to complete this task. If there is not one located in your textbook, you can go to the Internet and search for Periodic Table of the Elements.



Atomic Number _____ 8 _____
 Atomic Mass _____ 16 _____
 Name of Atom _____
 Symbol _____

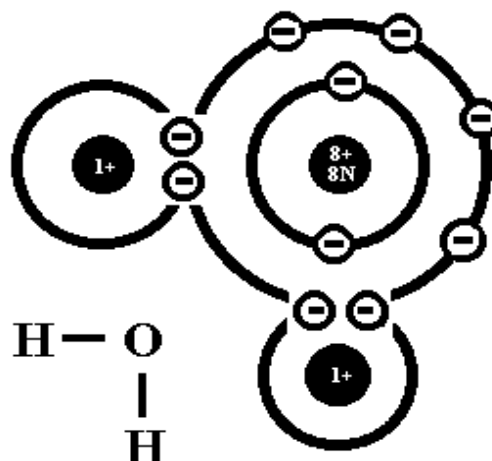
3. How many electrons are there in the outer most shell of a hydrogen atom? _____ How many more electrons are needed to fill this first orbit or energy shell? _____
4. How many electrons are there in the outermost shell of an oxygen atom? _____ How many more electrons are needed to fill this shell? _____

5. In the diagram at the right; color the hydrogen atom blue and the oxygen atom yellow.

6. Draw a black box around each pair of shared electrons.

7. Including shared electrons, how many are now in the outer shell of each hydrogen atom? _____ In the outer shell of the oxygen atom? _____

8. What does the line between each "H" and the "O" represent?



Molecular Formula for the above compound _____
A molecule of _____

9. How many covalent bonds can one hydrogen atom form? _____ How many covalent bonds does the oxygen atom form? _____

10. In the structural formula at the right,
how many covalent bonds does each O atom have? _____
How many covalent bonds does the carbon atom have? _____



Molecular Formula for the above compound _____
A molecule of _____

11. Fill in the blank lines in each of the above structural formulas.

12. Explain the difference between a structural formula and a molecular formula.

13. What seems to keep the electrons close to the nucleus as they are spinning rapidly around it?

14. Why are the electrons not pulled into the nucleus? Remember, unlike charges attract each other.