Name _____

Class Period _____

Date _____

Chapter 5

Sections 5-1 & 5-2

Note: *The answers to some of these questions may not be in Chapter 5. You may have to use the index to find the information elsewhere in your text.*

Note: The statement on page 126 "The third energy level can hold 18 electrons." is only true if there are more than three energy levels. The maximum number of electrons in an outside energy level is 8.

1. What contribution did Democritus make that was so important to the science of chemistry?

_____

_____

2. Describe what Rutherford discovered about the structure of the atom.

_____

_____

3. In the boxes below, **draw** or **describe** the six different atomic models presented in your textbook. If you make a drawing, label the parts.

4. Who discovered that the atom is mostly empty space?

_____

5. Who discovered that atoms are composed of tiny particles rather than being an indivisible unit?

_____

6. Who gave the name “atom” to the smallest piece of matter? _____

Please continue on the other side.

7. Who discovered that the nucleus of an atom was positively charged? _____

_____

8. How did the person named in #7 determine that the nucleus of an atom was positively charged?

_____

_____

9. If two **isotopes** of carbon have the same atomic number (6), what is the difference between the two isotopes?

_____

10. Tritium, an isotope of hydrogen, has two neutrons and one proton.
    a. What is the atomic number of this isotope? _____
    b. What is the mass of an atom of this isotope in AMUs? _____

11. Explain why the nucleus accounts for 99.9% of the mass of an atom.

_____

_____

12. What is the ***atomic number*** of an atom?

_____

13. Fill in the chart below.

PARTICLE	**MASS** (in amu's)	**CHARGE**	**LOCATION**
proton			
neutron			
electron			

14. What is the ***mass <u>number</u>*** of an atom?

_____

15. What is the ***atomic mass*** of an element?

_____

16. What is the **maximum** number of electrons for the ***first energy level*** in any atom? _____

17. What is the **maximum** number of electrons for the ***second energy level*** in any atom? _____

18. What is the **maximum** number of electrons for the ***third energy level*** in any atom? _____

19. What is the **maximum** number of electrons for the ***outside energy level*** in any atom? _____