

Chemistry Chapter 4 Study Guide

1. John Dalton's Atomic theory:
 - a. Link Law of Conservation of mass (Lavoisier)
 - b. Law of multiple Proportions (Dalton)
 - c. And Law of Definite Proportions (Proust)
2. Modern Atomic Theory
3. JJ Thomson
 - a. Discovery of the electron
4. William Thompson (Lord Kelvin)
 - a. Plum pudding model
5. Robert Millikan
6. Ernest Rutherford
7. Composition of Nucleus
8. Draw and label an atom with its parts and charges
9. What is the atomic number? Where is it on YOUR Periodic Table?
10. What is the atomic Mass? Where is it on YOUR Periodic Table?
11. What is an isotope?
12. How many protons, electrons and neutrons are there in an atom of chlorine-37?
13. How many protons, electrons and neutrons are there in an atom of carbon-13?
14. Write the nuclear symbol of oxygen-16.
15. Write the hyphen notation for the element whose atoms contain 7 electrons and 9 neutrons.
16. What is average atomic mass?
17. What is Avogadro's Number?
18. Who is the father of the Periodic Table? How was it originally arranged?
19. Who created the modern atomic theory? How is it arranged?
20. Be able to label the Periodic Table with the following: *metals*, *nonmetals*, *metalloids* and each *family*.
21. Compare and contrast *metals*, *nonmetals* and *metalloids*. Provide an example of each.
22. List the 5 major families of the periodic table, an example of each, and at least 3 properties of each.
23. Identify the element in period 6 group 5.
24. Identify the element in group 4 period 3.
25. What is an allotrope?
26. What is the octet rule? How does this apply to the formation of ions?
27. What are valence electrons? How do they apply to the formation of ions?
28. What is an ion?
29. What is a cation? How is it formed? What elements form cations?
30. What is an anion? How is it formed? What elements form cations?
31. How does an element's group number relate to the number of valence electrons it has? How does it relate to the ion (what charge) it forms?