Chapter 2 Classwork

1. Fill in the following table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Isotope | Isotope Notation | Atomic # | Protons | Electrons | Neutrons |
| Nickel-58 |  |  |  |  |  |
|  |  | 15 |  |  | 15 |
|  |  |  |  | 53 | 74 |
|  |  |  | 36 |  | 48 |
|  |  |  |  | 34 | 45 |
| Calcium-40 |  |  |  |  |  |
| Chlorine-37 |  |  |  |  |  |

1. What causes the net charge of the atom to change?
2. What causes the mass # to change?
3. Write Lead-208 in isotope notation.
4. How many neutrons does Lead-208 have?
5. What experiment helped discover the electron, the one using the cathode ray tube or the gold foil?
6. What experiment helped discover the atom is mostly empty space, the one using the cathode ray tube

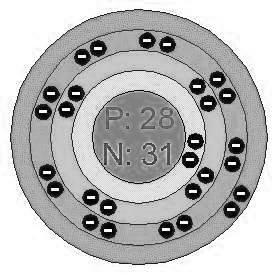
or the gold foil?

1. What is the average atomic mass of chlorine when:

75.8% of it is Chlorine-35 and 24.2% of it is Chlorine-37?

8. Which most accurately depicts the relative masses of the subatomic particles?

|  |  |  |  |
| --- | --- | --- | --- |
| Answer Choice | Proton | Neutron | Electron |
| A | 1 amu | 1/1836 amu | 1 amu |
| B | 1 amu | 1 amu | 1/1836 amu |
| C | 1/1836 amu | 1 amu | 1 amu |



9. What is the name of this atom?

10. What is the mass number of this atom?

11. Write the isotope notation for this atom.

12. A sample of glucose is found to have 34.92g of carbon, 5.87 g of hydrogen and 46.56g of oxygen. Another sample is found to have 0.4471g of carbon, 0.07510 g of hydrogen, and 0.5962g of oxygen. Show that these results are consistent with the law of definite proportions.

13. Magnesium has three naturally occurring isotopes (23.985042 amu and 78.99% abundance), (24.965837 amu and 10.00% abundance), and (25.962593 amu and 11.01% abundance). What is the average atomic mass?

14. How many liters of CO2 gas are there in 4.56 X 1024 atoms of CO2?

15. How many grams of Mg(C2H3O2)2 are there in 5.23 X 1023 molecules of the compound?

16. Determine the oxidation number (the number of electrons lost or gained to get to noble gas status) for the following:

a. S b. O c. K d. Al e. Na f. Mg