**Dougherty Valley HS Chemistry**

**S-6\***

**Fall Test #1 - Practice Problems**

1. Organize the matter into the four types of matter and explain your answer.

|  |  |  |
| --- | --- | --- |
| Matter | Type | Explanation |
| Gasoline |  |  |
| Uranium |  |  |
| Orange Juice |  |  |
| Methane (CH4) |  |  |

1. How many atoms are in the compound below?

(NH4)2SO4

1. Organize the changes below as physical or chemical and explain your answer.

|  |  |  |
| --- | --- | --- |
| Action | Change | Explanation |
| Melting of gold |  |  |
| Cooking meat |  |  |
| Digesting food |  |  |
| Charcoal drawing |  |  |

1. Explain the difference between the mass number and the average atomic mass number.
2. How many protons neutrons and electrons are in the elements below?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element | Proton # | Electron # | Neutron # | Mass # |
| Nitrogen - 16 |  |  |  |  |
| $$$$ |  |  |  |  |
| Most abundant Iron atom |  |  |  |  |
| $$-1 |  |  |  |  |

1. Chlorine has two isotopes 35Cl with a mass of 34.968852g and 37Cl with a mass of 35.965903. The percentage of these isotopes are 75.77% and 24.23% respectively. What is the average atomic mass unit of chlorine?
2. A sample of element X contains 100 atoms with a mass of 12.00 and 10 atoms with a mass of 14.00. Calculate the average atomic mass (in amu) of element X.
3. What is an alpha particle and what caused it to change course in the gold foil experiment?
4. Carbon-14 measurements on the linen wrappings from the Book of Isaiah on the Dead Sea Scrolls indicated that the scrolls contained about 79.5% of the carbon-14 found in living tissue. Approximately how old are these scrolls? The half-life of carbon-14 is 5730 years.
5. Phosphorus-32 is a radioactive isotope used as a tracer in the liver. How much phosphorus-32 was originally used if there is only 3.50 mg left in a sample after 288 h? (The half-life of phosphorus-32 is 14.3 days.)
6. Show plutonium – 239 going through two alpha decays.
7. The isotope Uranium – 238 undergoes a alpha decay and then two beta decays what is your final elemental isotope product?