**Atomic Model**

100 – What are the charges for protons, neutrons, and electrons and where are they located in an atom

A. protons – positive/nucleus; neutrons – neutral/nucleus; electrons – negative/in paths around nucleus (electron cloud)

200 – what identifies a specific element?

A. atomic number (number of protons) – different for each element

Bonus 100 pts – how can an atom of one element change into an atom of a different element?

1. radioactivity

300 – How many electrons total can the 1st 3 energy levels of an atom hold?

1. 28 (2 + 8 + 18)

400 - How do you find the number of neutrons in an atom?

A. Atomic mass – atomic number = number of neutrons

500 - Explain ions and isotopes

A. ion – gain/lose electrons; isotopes – different number of neutrons in nucleus

**That’s not my name**

Each one is worth 100 points:

As = Arsenic

Ar = Argon

K = Potassium

Cu = Copper

Sc = Scandium

Mn = Manganese

Na = Sodium

**Periodic Table**

100 – What are the columns and rows called in the periodic table?

1. Groups (columns) and period (rows)

200 – How can you tell how many protons are in an atom of a particular element?

1. Atomic Number

300 – How can you tell how many electrons are in an atom of a particular element?

1. Same as protons (atomic number)

400 – How can you tell how many neutrons are in an atom of a particular element?

1. Atomic mass (protons and neutrons) – Atomic number (protons) = number of neutrons

500 – What does the atomic mass tell us?

1. The average mass of isotopes of atoms of an element

**Regions**

100 – Found in the center of the periodic table

1. Transition metals

200 – Element that has some properties of both metals and nonmetals

1. metalloid

300 – Highly reactive, but not a metal

1. Halogens

400 – Group of elements that almost never reacts with other elements

1. Noble gases

500 – Most reactive metals belong to what group?

1. Alkali Metals

**Radioactivity/Isotopes**

100 – What is radioactivity?

1. The process by which atoms produce energy and produce particles

200 – What is half-life?

1. The amount of time it takes for one-half of the atoms in a particular sample to decay

300 – If you start with a sample of 220 and 2 half lives have passed, how much of the original sample is left?

1. 55

400 – Calcium-42 has how many protons? Neutrons? Electrons?

1. P=20, e=20, n=22

500 – What is radioactive decay?

1. The loss of neutrons in an isotope (causes one element to change into another)

**Final Jeopardy**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Element Name** | **Symbol** | **Atomic Number** | **Group #** | **Period #** | **Atomic Mass** | **# of Protons** | **# of Neutrons** | **# of Electrons** |
| **Lithium** |  |  |  |  |  |  |  |  |

Draw the electron shell diagram for the element Lithium below:

**Final Jeopardy**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Element Name** | **Symbol** | **Atomic Number** | **Group #** | **Period #** | **Atomic Mass** | **# of Protons** | **# of Neutrons** | **# of Electrons** |
| **Lithium** |  |  |  |  |  |  |  |  |

Draw the electron shell diagram for the element Lithium below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Atomic Model** | **That’s not my name** | **Periodic Table** | **Regions** | **Radioactivity/**  **Isotopes** |
| **100** | **100** | **100** | **100** | **100** |
| **200** | **100** | **200** | **200** | **200** |
| **300** | **100** | **300** | **300** | **300** |
| **400** | **100** | **400** | **400** | **400** |
| **500** | **100** | **500** | **500** | **500** |
|  | **100** |  |  |  |
|  | **100** |  |  |  |
|  | **100** |  |  |  |