|  |  |  |
| --- | --- | --- |
| Ionization IICλeMis+ry: http://genest.weebly.com Stop in for help every day at lunch and Tues,&Thurs after school! |  | Name\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_ |

1. The Law of Conservation of Mass says that if nothing enters or leaves a system, the total \_\_\_\_\_\_\_\_\_\_\_ in that system must be the same before and after any change.

Based on this Law, mark the following as possible or not:

1. If a reaction of A + B C + D ( possible / impossible )

30g 14g 40g 8g

1. If a reaction of W + X Y + Z ( possible / impossible )

14g 16g 15g 15g

1. For a dissolving reaction: Na2CO3(s) Na+(aq) + CO32-(aq) ( possible / impossible )

1. The Law of Conservation of Energy says that if nothing enters or leaves a system, the total \_\_\_\_\_\_\_\_\_\_ in that system must be the same before and after any change.

Use this law to spot any fibs below:

|  |  |
| --- | --- |
| 1. ( possible / impossible )

 | 1. ( possible / impossible )

 |

1. The Law of Conservation of Charge is similar to the two laws above. It says that if nothing enters or leaves a system, the total \_\_\_\_\_\_\_\_\_\_\_\_ in that system must be the same before and after any change.
2. The Law of Conservation of Charge can help us spot wrongly written equations for ions.
	1. Ba + 2e- Ba2+ possible / impossible
	2. F F+ + e- possible / impossible
	3. S S2+ + 2e- possible / impossible
	4. I I+ + e- possible / impossible
	5. Ag + e- Ag+ possible / impossible
3. Write a balanced equation for neutral Mg losing two electrons (In the first blank, write Mg. You don’t need to write the high low numbers, just the charge, if any):

\_\_\_\_ \_\_\_\_ + \_\_\_\_

1. Write a balanced equation for neutral chlorine atom gaining one electron:

\_\_\_\_ + \_\_\_\_ \_\_\_\_

1. Write a balanced equation for a neutral boron atom losing three electrons:

\_\_\_\_ \_\_\_\_ + \_\_\_\_

1. Write a balanced equation for O2- anion losing two electrons:

\_\_\_\_ \_\_\_\_ + \_\_\_\_

1. Write a balanced equation for Iron(III) ion gaining three electrons:

\_\_\_\_ + \_\_\_\_ \_\_\_\_

***Valence***

1. How many valence electrons does each atom below have?

|  |  |  |  |
| --- | --- | --- | --- |
|  | \_\_\_\_\_\_\_\_ |  | \_\_\_\_\_\_\_\_\_ |

***Below each particle group circle the total charge***

|  |  |  |  |
| --- | --- | --- | --- |
| 1.
 | 1.
 | 1.
 | 1.
 |
| ( -2 / -1 / neutral / +1 / +2 ) | ( -2 / -1 / neutral / +1 / +2 ) | ( -2 / -1 / neutral / +1 / +2 ) | ( -2 / -1 / neutral / +1 / +2 ) |

1. For electrically charged objects, the two principles of attraction are:
* attraction decreases with distance
* attraction decreases when charge decreases

|  |  |
| --- | --- |
|  | 1. In this drawing of an atom the particles are labeled with their charges. This atom contains \_\_\_\_\_\_\_ electrons, \_\_\_\_\_\_ protons, and \_\_\_\_\_\_ neutrons.
 |

1. How many valence electrons does each atom below have?

|  |  |  |  |
| --- | --- | --- | --- |
|  | \_\_\_\_\_\_\_\_ |  | \_\_\_\_\_\_\_\_\_ |

|  |  |  |
| --- | --- | --- |
| 1. In which situation below will attraction be stronger? ( A / B / no difference )
 |  | 1. In which situation below will attraction be stronger? ( A / B / no difference )
 |
| 1.
 |  | 1.
 |
| 1.
 |  | 1.
 |

|  |  |  |
| --- | --- | --- |
| 1. In which situation below will attraction be stronger? ( A / B / no difference )
 |  | 1. In which situation below will attraction be stronger? ( A / B / no difference )
 |
| 1.
 |  | 1.
 |
| 1.
 |  | 1.
 |

1. To remove an **electron** from an atom we have to pull hard enough to overcome the attraction of the atom’s **nucleus**. On the two atoms below, which has a valence electron that is easiest to remove? ( A / B )

|  |  |  |  |
| --- | --- | --- | --- |
| A |  | B |  |