**District Assessment Review**

 **CLS 1 – Matter**1. Fill in the following classification of matter diagram.

 Mixture

2 or more substance in the same place; the substances keep their own properties

Pure Substance

Consists of only 1 type of substance

 Element

Only 1 type of atom; bonded or unbonded

 Compound

2 or more different atoms bonded to make a new substance with new properties

 Heterogeneous

A mixture that is different throughout the sample

 Homogeneous

A mixture that is the same throughout the sample

2. A \_\_\_\_\_\_\_\_physical\_\_\_\_\_\_ change is when a substance changes form, shape, or
 phase but its identity remains the same.
 Give two examples of this type of change:
 1) \_\_\_\_\_\_\_freezing\_\_\_\_\_\_\_\_\_ 2) \_\_\_\_\_\_dissolving\_\_\_\_\_\_\_\_\_

3. A \_\_\_\_\_\_chemical\_\_\_\_\_\_\_\_ change is when a substance changes identity from one
 substance to another. A new substance forms with new properties.
 Give two examples of this type of change:
 1) \_\_\_\_\_\_\_burning\_\_\_\_\_\_\_\_\_\_ 2) \_\_\_\_\_\_\_rusting\_\_\_\_\_\_\_\_\_\_

 **CLS 2 – Atomic Theory & Periodic Table**1. Identify the following elements:
 a. The alkali metal in the 2nd period. \_\_\_\_\_\_\_Li\_\_\_\_\_\_\_\_\_\_
 b. The alkaline earth metal in the 4th period. \_\_\_\_\_\_\_Ca\_\_\_\_\_\_\_\_\_\_
 c. The halogen in the 5th period. \_\_\_\_\_\_\_I\_\_\_\_\_\_\_\_\_\_\_

 d. The noble gas in the 1st period. \_\_\_\_\_\_\_He\_\_\_\_\_\_\_\_\_\_

2. Determine the number of protons, neutrons, and electrons for the following ions:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Atomic # |  Mass # |  # of  protons |  # of neutrons |  # of electrons |
| Ca+2 | 20 | 40 | 20 | 20 | 18 |
| Cl-1 | 17 | 35 | 17 | 18 | 18 |
| Na+1 | 11 | 23 | 11 | 12 | 10 |

3. Circle all of the following that represent different isotopes of the SAME atom:

         
4. What is an isotope?
 Atoms of the same element that have different numbers of neutrons.

|  |  |  |  |
| --- | --- | --- | --- |
| Particle | Mass (amu) |  Charge |  Location |
| Proton | 1 | +1 | nucleus |
| Neutron  | 1 | 0 | nucleus |
| Electron | 0 | -1 | outside nucleus |

5. Fill in the following chart:

6. Which elements are shiny, good conductors of heat and electricity, malleable,
 and ductile? \_\_\_\_\_metals\_\_\_\_\_\_\_\_

7. Which elements are dull, brittle, and not good conductors of heat and electricity?
 \_\_\_\_\_nonmetals\_\_\_\_\_\_\_\_\_\_

8. Which elements have some characteristics from each of questions #6 and #7?
 \_\_\_\_\_metalloids\_\_\_\_\_\_\_\_\_\_

9. Put the following elements in order of lowest ionization energy to highest:
 Ba S Mg Ba < Mg < S

10. Put the following elements in order of largest atomic radius smallest:
 F K B K > B > F

11. Put the following elements in order of lowest electronegativity to highest:
 O Na Al Na < Al < O

**CLS 8 – Energy**
1. On the graph below, label where **solid, liquid, and gas** phases exist.
 Also identify the phase changes **melting and boiling.**

 Temp

 Energy

2. An endothermic reaction is one where the system \_\_\_\_\_\_\_absorbs\_\_\_\_\_\_ energy.

3. An \_\_\_exothermic\_\_\_\_\_ reaction is one where the system releases energy.

4. Draw a graph to represent an endothermic reaction and an exothermic reaction.

 Endothermic Exothermic

Energy Energy

 Reaction Time Reaction Time

Boiling

Gas

Liquid

Solid

Melting