Unit 7 Test Review – from previous units. The review for chemical reactions is the blue sheet you received in class.

1. Complete the chart about the states of matter below.

|  |  |  |  |
| --- | --- | --- | --- |
| State of matter | Definite shape? | Definite Volume? | Amount of Energy? |
| Solid |  |  |  |
| Liquid |  |  |  |
| Gas |  |  |  |
| Plasma |  |  |  |

1. Which type of change creates new substances?
2. Which type of changes only alters the outer appearance of a substance?
3. Determine if the following changes are physical or chemical changes?
   1. Perfume evaporating on your skin
   2. Butter melting
   3. Wood rotting
   4. Charcoal heating a grill
   5. autumn leaves changing color
   6. a hot glass cracking when placed in cold water
   7. melting copper metal
   8. burning sugar
   9. mixing sugar in water
   10. digesting food
4. Define atomic number. Define mass number.
5. Complete the chart of atomic structure for the isotopes below

|  |  |  |  |
| --- | --- | --- | --- |
| Isotopic symbol | # protons | # electrons | # neutrons |
|  | 12 |  | 12 |
| 103 45Rh |  |  |  |
|  |  | 56 | 81 |
| 31 15P |  |  |  |

1. Match the element to the group they belong in.
   1. Ca (1) alkali metal
   2. Br (2) alkaline earth metal
   3. Tc (3) transition metal
   4. Na (4) rare earth metals
   5. Ar (5) actinides
   6. Eu (6) halogen
   7. Bk (7) noble gas
2. What is the trend for atomic radius (size) and ionic radius (size) as you move:
   1. Down a group?
   2. Across a period?
3. What is the trend for ionization energy and electronegativity as you move:
   1. Down a group?
   2. Across a period?
4. List these elements, **Pd, Br,** and **Sn,** in order from smallest to largest
   1. Atomic radius
   2. Ionization energy
5. List these elements, **O, Bi,** and **As** , in order from smallest to largest
   1. Ionic radius
   2. Electronegativity
6. Write the formulas for the following compounds:
   1. Potassium dichromate
   2. Gold (III) oxide
   3. Barium nitrite
   4. Iron (II) hydroxide
   5. Hydronitric acid
   6. Diboron tetrahydride
   7. Nitric acid
   8. Lithium sulfate
   9. Nitrous acid
   10. Phosphorous pentafluoride
7. Write the names for the following compounds:
   1. N2S
   2. P2Br4
   3. H2CO3
   4. HBr
   5. H2SO3
   6. CaO
   7. Mg(ClO3)2
   8. Hg(CN)2
   9. Cr(CrO4)3