**Oxford High School**

**Chemistry**

**Chapter 1-10 Cumulative Review**

1. Charcoal:ashes reactant:\_\_\_\_\_
2. Equation
3. Reaction
4. Heat
5. Product
6. Tool:hammer catalyst:\_\_\_\_
7. Reaction
8. MnO2
9. Combustion
10. Decomposition
11. East:West combination:\_\_\_\_\_
12. Decomposition
13. Reaction
14. Coefficient
15. Replacement
16. Calculate the number of moles in each of the following (use correct number of significant digits):
17. 54.0 L of nitrogen dioxide at STP
18. 4.27 x 10 24 molecules of carbon monoxide
19. Calcium chloride is a drying agent, CaCl2. The maximum amount of water absorbed for each amount of drying agent is listed in the table.
20. Complete the table (solve for moles)
21. Make a graph with moles of water on the y-axis and moles of CaCl2 on the x-axis
22. Based on the graph, how many molecules of water does each formula unit of CaCl2 absorb?

|  |  |  |  |
| --- | --- | --- | --- |
| CaCl2(g) | CaCl2 (moles) | H2O (g) | H2O(moles) |
| 17.3 |  | 5.62 |  |
| 48.8 |  | 15.8 |  |
| 124 |  | 40.3 |  |
| 337 |  | 109 |  |
|  |  |  |  |

1. Complete the following table. Identify each process as a physical or chemical change. Then indicate whether the change is an example of a change in matter and/or a change in energy. If it is a change in energy, specify increase or decrease.

|  |  |  |  |
| --- | --- | --- | --- |
| Observation | Chemical or Physical Change | Change in matter | Change in energy |
| Burning of gas |  |  |  |
| Condensation of water |  |  |  |
| Leaf changing color |  |  |  |
| Dry ice subliming |  |  |  |
| Food spoiling |  |  |  |
| Salt dissolving in water |  |  |  |
| Acid reacting with a metal |  |  |  |
| Snow fall |  |  |  |
| Crushing a rock |  |  |  |

1. How many significant digits are in the following numbers:
2. 0.0070 g \_\_\_\_\_\_
3. 1007.0 g \_\_\_\_\_
4. 325.0 g \_\_\_\_\_\_
5. 100 ml \_\_\_\_\_\_\_
6. 100. ml \_\_\_\_\_\_
7. 0.0001 ml \_\_\_\_\_\_
8. Match the following type of bonding to the correct property
9. Metallic bonding B. ionic bonding C. covalent bonding

\_\_\_\_ gas at room temperature

\_\_\_\_ crystal at room temperature

\_\_\_\_ can be a solid, liquid, or gas at room temperature

\_\_\_\_ conducts electricity well as a solid

\_\_\_\_ very rigid solid

\_\_\_\_ a solid that bends easily

\_\_\_\_ a bond where the electrons are free to move

\_\_\_\_ a bond where electrons are fixed

\_\_\_\_ a bond where electrons are attracted to two nuclei

1. Name the following compounds
2. CuCl2
3. NH4OH
4. N2O4
5. Al2(CO3)3
6. Write the formulas for the following compounds
7. Sulfur tetrafluoride
8. Cobalt (II) phosphate
9. Aluminum sulfide
10. Using a periodic table, complete the following table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element | Neutrons | Protons | Mass Number | Avg At. Mass (amu) |
| Zr | 50 |  |  |  |
| C | 7 |  |  |  |
| Ca | 20 |  |  |  |

1. Match the following scientist with their contribution to the evolution of atomic theory
2. Dalton B. Rutherford C. Thomson D. Bohr

\_\_\_\_ Gold foil experiment

\_\_\_\_ emission spectrum

\_\_\_\_ first atomic theory

\_\_\_\_ cathode ray

\_\_\_\_ electrons exist in quantized energy levels

\_\_\_\_ atoms contain negative particles called electrons

\_\_\_\_ all matter is made of small objects called atoms

\_\_\_\_ the nucleus of an atom is small and positive

\_\_\_\_ the atom is mostly empty space

1. Place the scientists listed in question #12 in chronological order based on when they completed their work on atomic structure.