**Oxford High School**

**Chemistry**

**Chapter 1-8 Cumulative Review**

1. A cylinder has a height of 28.0 cm and a diameter of 3.00 cm. If the container is filled with water and the density of the water is measured to be 0.988 g/cm3
2. What is the mass in grams of the water?
3. What is the mass in mg of the water?
4. What is the mass in kg of the water?
5. Write the correct electron configuration for the oxide ion. Which noble gas has the same electron configuration?

B.Draw the orbital diagram for both oxygen and the oxide ion?

C.How many unpaired electrons are in each?

1. A. Draw the Lewis structure for H3O+

B. What is its electron geometry?

C.Draw, name, and show bond angles for its molecular shape.

D.What is its hybridization?

Behavior of Electrons

1. Complete the following Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Atom | Type of Atom | Valence Electrons | Type of bonding | Reactivity (high/low) |
| Rb |  |  |  |  |
| Cl |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Atom | Electron Configuration | Number of electrons in each energy level | Number of electrons in each sublevel | Shape of each orbital used | Number of Protons | Number of Neutrons |
| Ca-40 |  |  |  |  |  |  |

1. Using the concepts of quantum theory, explain why sodium emits yellow light and lithium emits red light.