

G10 Science: Class 1 Homework

1. Draw the Bohr-Rutherford Diagrams for the following elements: [3 marks]

- a) Nitrogen (N-14) b) Aluminum (Al-27) c) Chlorine (Cl-35)

2. Draw the Lewis Diagrams for the following elements: [3 marks]

- a) Bromine b) Oxygen c) Lithium Ion (Li^+)

3. Compare and contrast:

- a) Ion and Isotope [3 marks]

- b) Physical and Chemical Property [3 marks]

- c) Cation and Anion [3 marks]

4. Complete the following table for the following ions: [5 marks]

Ion	Name	Number of Protons	Number of Neutrons	Number of Electrons
Mg ²⁺				
	Sulfide ion			
		26		23
Br ⁻				
	Nitride ion			

5. Draw the Lewis Dot Structure for magnesium and chlorine and show the transfer of electrons to make an ionic compound. [5 marks]

6. Decide if each pair will form an ionic compound. Write Yes or No in the space provided. [5 marks]

a) Mg and O _____

b) Zn and Cl _____

c) C and F _____

d) H and F _____

e) Sr and I _____

7. Dissolved ions are surrounded by water molecules which are polar molecules. This means that the water molecule has a partial positive charge on the Hydrogen atoms and a partial negative charge on the Oxygen atoms. Explain how the water prevents the ions from forming a solid again. [2 marks]

8. Name each of the following compounds: [20 marks]

Chemical Formula	Chemical Name
CaF ₂	
K ₂ S	
Al ₂ O ₃	
LiBr	
Ca ₃ P ₂	
PbCl ₂	
Fe ₂ O ₃	
SnS	
Cu ₃ P ₂	
CaCrO ₄	
CuF ₂	
K ₃ P	
Cu ₃ P	
TiBr ₃	
MnO	
KMnO ₄	
CaS	
CoN	
FeP	
BaCl ₂	

9. Write the chemical formulas for the following compounds: [20 marks]

Chemical Formula	Chemical Name
	Calcium chloride
	Aluminum phosphate
	Magnesium sulfide
	Lithium nitride
	Calcium nitride
	Iron (II) bromide
	Manganese (IV) oxide
	Tin (IV) chloride
	Copper (I) sulfide
	Iron (III) nitride
	Copper (II) oxide
	Silver acetate
	Cobalt (III) oxide
	Lead (II) nitride
	Aluminum sulfide
	Calcium oxide
	Beryllium hydroxide
	Sodium phosphide
	Chromium (II) fluoride
	Iron (III) iodide