Name Key

2pgs Key to Test Review Ch5

Ions and Ionic Compounds (Naming and Bonding) Review Ch. 5

1. What mono-atomic **ion** has 26 protons, 30 neutrons and 24 electrons? Fe^{+2}

2. Write correct name and formula for the two forms of Lead combining with hydroxide.

Lead II Oxide PbO, Lead IV Oxide PbO_2

3. Write the correct formula for the combining of Mg with P? Mg_3P_2

4. Write the correct formula for the polyatomic Ions:

phosphate PO_4^{3-}, Nitrate NO_3^{-1}, Acetate $C_2H_3O_2^{-1}$

5. Make the correct compound for these polyatomic ions with Aluminum

$AlPO_4$, $Al(NO_3)_3$, $Al(C_2H_3O_2)_3$

6. List some M and NM and Metal characteristics

Salts	M + NM	crystal lattice	cations + anions	electrolytes
Metals	lustrous	ductile malleable	conduct heat electricity	mobile sea of electrons
Nonmetals	nonconductors heat	brittle	g, l or solid	nonelectrolytes

7. Fill in the following table:

Name	Formula	Name Formula electron dot	Ionic or Covalent	Electrolyte or nonelectrolyte
Sodium iodide	NaI	$[Na]^+ [:\ddot{\underset{..}{I}}:]^{-1}$	I	Electrolyte
Carbon Dioxide	CO_2	·C: O:	C	Nonelectrolyte
Acetic acid	$HC_2H_3O_2$	omit	Both	Weak Electrolyte
Iron III sulfate	$Fe_2(SO_4)_3$	$2Fe^{+3}$ $3SO_4^{2-}$	I	Electrolyte
Aluminum iodide	AlI_3	$[Al]^{+3}$ $3[:\ddot{\underset{..}{I}}:]^{-1}$	I	Electrolyte

Atoms for dot formula

	Name of ION	Formula of ION		Name of ION	Formula of ION
1.	chloride	Cl^-	28.	Hypochlorous	ClO^-
2.		Li^+	29.	zinc	Zn^{+2}
3.	Sulfide	S^{2-}	30.	Phosphate	PO_4^{3-}
4.	Copper (I)	Cu^+	31.	calcium	Ca^{2+}
5.	bromide	Br^-	32.	Iron III	Fe^{3+}

Word symbol bank

1. IA- VIIIA 2. Ionic 3. Polar covalent 4. Nonpolar covalent 5. Protons 6. Electrons 7. Neutrons 8. Energy levels 9. Energy gained or lost 10. Ionization energy 11. Electron Affinity (energy) 12. Anion 13. Cation 14. Polyatomic ion 15. Crystal lattice 16. Stable or Octet 17. Low Potential Energy 18. High Potential Energy

Sample questions;

1. Element **A** is a **metal** that forms a bromide with the formula ABr_2. Element **A** is in the main group IIA Alkaline Earth Metals
2. The formation of a chemical bond involves electrons (6) Energy gain or lose
3. When the difference in electronegativity values of elements X and Y increases, the bond type is probably Ionic (2)
4. A negative ion 12 Anion 5. A positive ion 13 Cation
6. When the atom gains an electron, the resulting particle is negative Anion (12)
7. Compounds which as crystals are composed of ions are A) polar covalent; B) non-polar covalent; C) Ionic; D) macro-molecular.
8. Which compound is the most ionic i.e. largest electronegativity difference?

   A) $CCl_4(l)$ B) $SiO_2(s)$ C) $KCl(s)$
9. Consider the general formula A_2O_3 (+3 −2). The elements which form oxides with this formula are in which Group? IIIA Aluminum Family
10. Elements **A** and **X** combine to form the compound A_3X_2. If the electron-dot symbol of the neutral atom **A** shows two electrons, the number of electrons in this symbol for atom X must be IIA A: ·X: VA
11. Salts or Ionic compounds are arranged in a crystal lattice
12. As independent particles, atoms are high Potential Energy -18
13. Atoms naturally move toward low Potential Energy -17
14. How many moles of LiF are present in 60.0 g? $\frac{60.0\text{ g LiF}}{} \left| \frac{1.0\text{ mol LiF}}{26.0\text{ g LiF}} \right. = 2.31\text{ mol LiF}$

Nomenclature:

1. Name the compound whose formula is $Al_2(SO_4)_3$. Aluminum Sulfate
2. Name the compound whose formula is PbI_2 Lead II Iodide
3. What is the formula for iron (III) oxide? Fe_2O_3
4. What is the formula for silver chloride? AgCl