

Name _____

Chemistry

___/___/___

SOL Questions – Chapter 4

For each of the following bubble in the letter of the best answer on the GREEN side of your scantron.

1. Elements from which two groups in the periodic table would *most* likely combine with each other to form an ionic compound?

- a. 1 and 2 b. 16 and 17 c. 1 and 17 d. 17 and 18

2. Which of the following describes what takes place when iron (Fe°) is oxidized to Fe^{2+} ions?

- a. A gain of two electrons b. A loss of two electrons
c. A gain of two protons d. A loss of two protons

3. The formula for lithium nitride is —

- a. LiN b. Li_3N c. Li_3N_3 d. NLi_3

4. Chlorine and bromine are in the same family in the periodic table. According to the information in the table to the right, what would be the correct formula for sodium bromate?

- a. NaBrO b. Na_2BrO c. Na_3BrO_3 d. NaBrO_3

5. When naming a transition metal that has more than one oxidation number, the numeric value of the oxidation number is indicated by a —

- a. Roman numeral b. Greek prefix c. subscript d. suffix

6. An alkali metal will most readily react with —

- a. another alkali metal b. an alkaline earth metal c. a halogen d. a noble gas

7. Which of these is the correct name for KBr ?

- a. Potassium bromine b. Potassium bromate c. Potassium bromide d. Potassium bromite

8. What is the correct formula for ammonium phosphate?

- a. NH_4PO_4 b. $(\text{NH}_4)_2(\text{PO}_4)_3$ c. $(\text{NH}_4)_3\text{PO}_4$ d. $\text{NH}_4(\text{PO}_4)_3$

9. Cobalt, a transition metal, can have an oxidation number of either 2+ or 3+. Which of these represents the two possible chemical formulas for the chemical combination of cobalt with oxygen?

- a. CoO , Co_2O_3 b. CoO_3 , Co_3O_2 c. Co_2O_3 , Co_3O_2 d. CoO , Co_3O_2

10. Which statement describes the equation to the right?

- a. Magnesium transfers an electron to each atom of the iodine molecule.
b. The iodine molecule transfers two protons to magnesium.
c. Magnesium shares an electron with iodine.
d. Iodine becomes a free monatomic element.



11. To indicate the number of atoms of each element present in a molecular compound, scientists use —

- a. Roman numerals b. superscripts c. prefixes d. subscripts

12. The correct name for MgI_2 is —

- a. magnesium iodide b. magnesium iodite c. magnesium(II) iodide d. magnesium diiodide

13. Which is the correct formula for iron(III) sulfate?

- a. $\text{Fe}_3(\text{SO}_4)_2$ b. FeSO_4 c. $\text{Fe}_2(\text{SO}_4)_3$ d. $\text{Fe}_2(\text{SO}_3)_3$

14. The correct formula of an ionic compound containing Al^{3+} and CO_3^{2-} is —

- a. AlCO_3 b. $\text{Al}(\text{CO}_3)_3$ c. $\text{Al}_2(\text{CO}_3)_3$ d. $\text{Al}_3(\text{CO}_3)_2$

Selected Polyatomic Ions	
Name	Formula
Hypochlorite	ClO^-
Chlorite	ClO_2^-
Chlorate	ClO_3^-
Perchlorate	ClO_4^-

28. Which of the following shows the correct number of atoms of each element in the formula $\text{Mg}(\text{NO}_3)_2$?

- a. 1 magnesium atom, 2 nitrogen atoms, and 6 oxygen atoms
- b. 1 magnesium atom, 2 nitrogen atoms, and 5 oxygen atoms
- c. 1 magnesium atom, 1 nitrogen atom, and 6 oxygen atoms
- d. 1 magnesium atom, 1 nitrogen atom, and 5 oxygen atoms

29. What is the name of NH_4OH ?

- a. Ammonium hydroxide
- b. Nitrogen oxygen hydride
- c. Nitrogen hydroxide
- d. Ammonium oxygen hydride

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