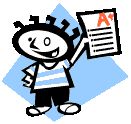
Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class period: \_\_\_\_\_\_

Unit 7: Chemical Names and Formulas

Test Review Answer key

**What to study?**

* Quizzes
* Homework
* Notes
* Bell Ringers

**What will the questions be like? What can I expect?**

This test will be just like the previous quizzes you have taken.

* Matching
* Multiple choice
* Short answer

**Sample questions/Important Topics**

1. Please fill in the best answer:

1. The Periodic Table contains all the elements, arranged according to similarities in their properties.
2. The nonmetals are on the right hand side of the “staircase”
3. The metals are on the left hand side of the “staircase”.
4. Although hydrogen is on the left hand side of the “staircase” on the periodic table, it is a non-metal.
5. The two types of compounds are ionic and covalent.
6. Ionic compounds are formed when atoms transfer electrons.
7. Atoms that gain electrons get a negative charge.
8. Metals tend to form ions with a positive charge.
9. Crystals are huge conglomerations of + and – ions in a 3-dimensional, repeating pattern.
10. Molecular compounds are formed when atoms share electrons.
11. A molecule is an electrically neutral group of atoms that act together as a unit.
12. Molecular compounds are formed when nonmetals bond together.
13. Of the two types of compounds, ionic compounds have a much higher melting point.
14. Ionic compounds are good conductors if they are dissolved in water, (aqueous state).
15. A(n) chemical formula indicates the makeup of a compound.
16. A(n) empirical formula tells the smallest whole number ratio of + to – ions within an ionic compound.
17. A(n) molecular formula tells the exact makeup of 1 molecule of a molecular compound.
18. The electrons in an atom’s outermost shell are called its valence electrons.
19. Sodium wants to lose one electron to become isoelectronic with Neon.
20. When magnesium gets the same electron configuration as Ne it has a +2 charge.
21. A single covalent bond consists of 2 shared electrons.
22. The octet rule says that most atoms want 8 electrons in their outermost shell.
23. In ionic bonding, the two ways atoms can get the same configuration as a noble gas is by gaining or losing electrons.
24. In covalent bonding, atoms share electrons.
25. Atoms in group 15 will gain three electrons to get a –3 charge.
26. Molecules with 5 atoms, like CH4, will have a tetrahedral shape.
27. The VSEPR theory stands for the valence shell electron pair repulsion theory.
28. Ar and Cl-1 have the same electron configuration, so they are isoelectronic with each other.
29. I-1 has the same electron configuration as the noble gas Xenon.
30. Helium is the only noble gas with 2 valence electrons.
31. Ionic compounds are made up of crystals, which are very large structures consisting of alternating + and – ions.
32. When atoms lose electrons they get a positive charge.
33. When nitrogen bonds covalently it will make a total of three bonds.
34. Ionic compounds will not conduct an electric current in the solid state.
35. Metals are malleable, which means they can be hammered into different shapes.
36. Hydrogen is the only element in group 1 to bond covalently.
37. Molecules with a trigonal bipyramidal shape have a total of six atoms in the molecule.
38. The difference between the trigonal planar and pyramid shapes is that the pyramid shape has an unshared pair of electrons on the central atom.
39. A double covalent bond consists of four shared electrons.
40. The 2 types of bonding are covalent and ionic.
41. In a polar covalent bond, electrons are shared unequally.
42. For the element **potassium**,
43. Write the electron configuration 1s2 2s2 2p6 3s2 3p6 4s1

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1. Write the electron dot structure: K
2. How many electrons will it lose or gain to attain a noble gas configuration? lose 1
3. What charge will it have when it loses or gains those electrons? +1
4. Write the new electron configuration 1s2 2s2 2p6 3s2 3p6
5. What noble gas is it now isoelectronic with? Ar
6. For the element **nitrogen**,
7. Write the electron configuration 1s2 2s2 2p3

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1. Write the electron dot structure: N
2. How many electrons will it lose or gain to attain a noble gas configuration? gain 3
3. What charge will it have when it loses or gains those electrons? -3
4. Write the new electron configuration 1s2 2s2 2p6
5. What noble gas is it now isoelectronic with? Ne
6. Write the formulas for the following **IONIC** compounds.
7. Potassium nitride K3N
8. Iron(III) sulfite Fe2(SO3)3
9. Calcium oxide CaO
10. Tin(IV) carbonate Sn(CO3)2
11. Gallium chlorate Ga(ClO3)3
12. Zinc oxalate ZnC2O4
13. Magnesium phosphate Mg3(PO4)2
14. Cobalt(III) permanganate Co(MnO4)3
15. Silver sulfate Ag2SO4
16. Lead(IV) fluoride PbF4
17. Name the following **IONIC** compounds.
18. Na(BrO3) sodium bromate
19. K3(AsO4) potassium arsenate
20. Sr(NO2)2 strontium nitrite
21. Mg(HSO4)2 magnesium hydrogen sulfate
22. NiCl2 nickel(II) chloride
23. Ba3P2 barium phosphide
24. Al2(SO3)3 aluminum sulfite
25. Ag(IO3) silver iodate
26. Be(C2O4) beryllium oxalate
27. (NH4)2S ammonium sulfide
28. SnF2 tin(II) fluoride
29. Hg2Br2 mercury(I) bromide
30. Co(PO4) cobalt(III) phosphate
31. Fe(CO3) iron(II) carbonate
32. Pb(NO3)4 lead(IV) nitrate
33. Cu2(SO3) copper(I) sulfite
34. Cr3N2 chromium(II) nitride
35. Sn(CrO4)2 tin(IV) chromate
36. Co2(Cr2O7)3 cobalt(III) dichromate
37. Hg(CN)2 mercury(II) cyanide
38. Draw the *structural formula* for each of the following molecules AND indicate if it is *polar or non-polar:*
39. CH4 nonpolar
40. Br2 nonpolar

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1. IF polar

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1. SiS2 nonpolar

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1. SbI3 polar

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1. SeCl2 polar

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1. Draw the *structural formula* for the following molecules and *indicate their shapes.*

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1. SCl2 bent

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1. HI linear

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1. SeNF bent

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1. COS linear

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1. PBr3 pyramid

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1. SiS2 linear

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1. SbF5 trigonal bipyramidal

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1. Write the formulas for the following **MOLECULAR** compounds.
2. Silicon tetrabromide SiBr4
3. Sulfur trioxide SO3
4. Diselenium hexafluoride Se2F6
5. Tetrabromine decaiodide Br4I10
6. Phosphorus pentachloride PCl5
7. Diiodine nonachloride I2Cl9
8. Arsenic heptaoxide AsO7
9. Oxygen dichloride OCl2
10. Name the following **MOLECULAR** compounds.
    1. S3O9 trisulfur nonaoxide
    2. P4O10 tetraphosphorus decaoxide
    3. SiI4 silicon tetraiodide
    4. NCl3 nitrogen trichloride
    5. S2Cl6 disulfur hexachloride
    6. AsF5  arsenic pentafluoride
    7. IBr7  iodine heptabromide
    8. C3H8 tricarbon octahydride
    9. SbCl3 antimony trichloride
    10. TeCl6  tellurium hexachloride
11. Write formulas for the following **ACIDS:**
12. Chloric acid HClO3
13. Hydrobromic acid HBr
14. Phosphorous acid H3PO4
15. Chlorous acid HClO2
16. Bromic acid HBrO­3
17. Name the following **ACIDS**:
18. H3(AsO4) arsenic acid
19. H(ClO2) chlorous acid
20. HF hydrofluoric acid
21. H(HS) hydrobisulfuric acid
22. H(ClO) hypochlorous acid