Name: KEY

Formula Assignment #1
Compound Names and Formulas
Elements with ONE Combining Capacity ONLY

A. Name these Compounds

1. Li_2S LITHIUM SULPHIDE
2. CaO CALCIUM OXIDE
3. NaF SODIUM FLUORIDE
4. $CaBr_2$ CALCIUM BROMIDE
5. $MgCl_2$ MAGNESIUM CHLORIDE
6. BBr_3 BORON BROMIDE
7. Cs_2O CESIUM OXIDE
8. FrBr FRANCIUM BROMIDE
9. Ag_2S SILVER SULPHIDE
10. GeF_4 GERMANIUM FLUORIDE
11. Ga_2O_3 GALLIUM OXIDE
12. $EsCl_3$ EINSTEINIUM CHLORIDE
13. Fm_2O_3 FERMIUM OXIDE
14. Mg_3N_2 MAGNESIUM NITRIDE
15. Rb_2O RUBIDIUM OXIDE
16. RaO RADIUM OXIDE
17. SrO STRONTIUM OXIDE
18. Tc_2O_7 TECHNETIUM OXIDE

B. Write the correct chemical formula for these compounds by using the cross rule.

1. sodium chloride $NaCl$
2. magnesium fluoride MgF_2
3. silver oxide Ag_2O
4. indium bromide $InBr_3$
5. zinc bromide $ZnBr_2$
6. neodymium oxide Nd_2O_3
7. thorium sulphide ThS_2
8. actinium oxide Ac_2O_3
9. radium bromide $RaBr_2$
10. cesium oxide Cs_2O
11. hydrogen oxide H_2O
12. francium nitride Fr_3N
13. rubidium phosphide Rb_3P
14. potassium oxide K_2O
15. beryllium sulphide BeS
16. lithium sulphide Li_2S
17. hydrogen bromide HBr
18. strontium nitride Sr_3N_2
19. calcium oxide CaO
20. tantalum nitride Ta_3O_5

Name: KEY

Formula Assignment #2
Compound Names and Formulas
Elements with TWO OR MORE Combining Capacities

A. Write the correct formula for the following compounds, all of which have been named using the modern Roman Numeral Method. The combinign capacity is given after the first element (metallic) in Roman Numerals.

1. copper (II) oxide CuO
2. mercury (I) oxide Hg_2O
3. gold (III) chloride $AuCl_3$
4. thallium (III) bromide $TlBr_3$
5. bismuth (V) oxide Bi_2O_5
6. terbium (III) oxide Tb_2O_3
7. uranium (VI) oxide UO_3
8. protactinium (III) bromide $PaBr_3$
9. cerium (III) oxide Ce_2O_3
10. arsenic (V) sulphide As_2S_5
11. manganese (III) oxide Mn_2O_3
12. vanadium (II) bromide VBr_2
13. niobium(V) oxide Nb_2O_5
14. titanium (III) oxide Ti_2O_3
15. titanium (III) nitride TiN
16. iron (II) oxide FeO
17. cobalt (II) phosphide Co_3P_2
18. tin (II) oxide SnO
19. thulium (II) bromide $TmBr_2$
20. copper (II) bromide $CuBr_2$

B. Determine the combining capacity of the first element by using the reverse cross rule. Name the compound using the Roman Numeral Method.

1. $SnCl_4$ TIN (IV) CHLORIDE
2. $BiBr_5$ BISMUTH (V) BROMIDE
3. PoO_2 POLONIUM (IV) OXIDE
4. PbI_2 LEAD (II) IODIDE
5. HgO MERCURY (II) OXIDE
6. $HgCl$ MERCURY (I) CHLORIDE
7. Au_2O_3 GOLD (III) OXIDE
8. $FeCl_2$ IRON (II) CHLORIDE
9. PdF_4 PALLADIUM (IV) FLUORIDE
10. Os_2O_3 OSMIUM (III) OXIDE
11. $MoBr_2$ MOLYBDENUM (II) BROMIDE
12. VCl_5 VANADIUM (V) CHLORIDE
13. Mn_2O_3 MANGANESE (III) OXIDE
14. CoO COBALT (II) OXIDE
15. Np_2O_3 NEPTUNIUM (III) OXIDE
16. V_2O_5 VANADIUM (V) OXIDE

Name: KEY

Formula Assignment #3
Compound Names and Formulas
Elements with ONE, TWO OR MORE Combining Capacities

A. Write the correct formula for the following compounds.

1. gallium oxide Ga_2O_3
2. mercury (I) chloride $HgCl$
3. tin (IV) bromide $SnBr_4$
4. indium oxide In_2O_3
5. cadmium sulphide CdS
6. magnesium oxide MgO
7. potassium nitride K_3N
8. iron (III) sulphide Fe_2S_3
9. gold (III) bromide $AuBr_3$
10. zinc oxide ZnO
11. silicon oxide SiO_2
12. aluminum bromide $AlBr_3$
13. tin (II) sulphide SnS
14. germanium (III) bromide $GeBr_3$
15. nickel (II) oxide NiO
16. strontium astatide $SrAt_2$
17. aluminum oxide Al_2O_3
18. copper (II) oxide CuO
19. lawrencium fluoride LrF_3
20. actinium oxide Ac_2O_3

B. Determine the combining capacity of the first element by using the reverse cross rule. Name the compound correctly. Only include the Roman Numeral in the name if the first element has 2 or more combining capacities.

1. $CaBr_2$ CALCIUM BROMIDE
2. K_2O POTASSIUM OXIDE
3. Fe_2O_3 IRON (III) OXIDE
4. ZnF_2 ZINC FLUORIDE
5. $CuCl$ COPPER (I) CHLORIDE
6. Ni_2O_3 NICKEL (III) OXIDE
7. $AuCl$ GOLD (I) CHLORIDE
8. $HgBr$ MERCURY (I) BROMIDE
9. $AsCl_5$ ARSENIC (V) CHLORIDE
10. Eu_2O_3 EUROPIUM (III) OXIDE
11. $NdBr_3$ NEODYMIUM BROMIDE
12. Cu_3N_2 COPPER (II) NITRIDE
13. CoS COBALT (II) SULPHIDE
14. ZrO_2 ZIRCONIUM OXIDE
15. Li_2O LITHIUM OXIDE
16. NaH SODIUM HYDRIDE

Name: KEY

Formula Assignment #4
Compound Names and Formulas
Compounds with Polyatomic Ions

A. Write correct formula for these compounds. They all contain polyatomic ions.

1. ammonium chloride NH_4Cl
2. sodium chlorate $NaClO_3$
3. sodium sulphate Na_2SO_4
4. potassium sulphite K_2SO_3
5. calcium phosphate $Ca_3(PO_4)_2$
6. calcium hydroxide $Ca(OH)_2$
7. iron (III) hydroxide $Fe(OH)_3$
8. copper (II) sulphate $CuSO_4$
9. sodium phosphite (PO_3^{3-}) Na_3PO_3
10. lithium chlorate $LiClO_3$
11. gold (III) hydroxide $Au(OH)_3$
12. sodium carbonate Na_2CO_3
13. calcium hydrogen carbonate $Ca(HCO_3)_2$
14. ammonium nitrate NH_4NO_3
15. ammonium carbonate $(NH_4)_2CO_3$
16. ammonium sulphate $(NH_4)_2SO_4$
17. lithium phosphate Li_3PO_4
18. iron (III) sulphate $Fe_2(SO_4)_3$
19. potassium hydroxide KOH
20. ammonium hydroxide NH_4OH

B. Name the following compounds which contain polyatomic ions correctly.

1. $CaCO_3$ CALCIUM CARBONATE
2. $NaHCO_3$ SODIUM HYDROGEN CARBONATE
3. NH_4OH AMMONIUM HYDROXIDE
4. H_2SO_4 HYDROGEN SULPHATE
5. $NaNO_3$ SODIUM NITRATE
6. $Fe_2(CO_3)_3$ IRON (III) CARBONATE
7. $Al_2(SO_4)_3$ ALUMINUM SULPHATE
8. HOH HYDROGEN HYDROXIDE
9. $Ca(NO_3)_2$ CALCIUM NITRATE
10. Li_2CO_3 LITHIUM CARBONATE
11. $Zn(OH)_2$ ZINC HYDROXIDE
12. $Ca(OH)_2$ CALCIUM HYDROXIDE
13. $Cr(OH)_3$ CHROMIUM (III) HYDROXIDE
14. $Ca(ClO_3)_2$ CALCIUM CHLORATE
15. $Pb_3(PO_4)_2$ LEAD(II) PHOSPHATE
16. $BaCO_3$ BARIUM CARBONATE
17. $Be(OH)_2$ BERYLLIUM HYDROXIDE
18. Li_3PO_4 LITHIUM PHOSPHATE
19. $Fe_2(CO_3)_3$ IRON (III) CARBONATE
20. H_3PO_4 HYDROGEN PHOSPHATE

Name: KEY.

Formula Assignment #5
Compound Names and Formulas
Compounds that use the Prefix System

Prefixes and their meanings
mono = 1, di or bi = 2, tri = 3, teta = 4, penta = 5, hexa = 6, hepta = 7, octo = 8, nona = 9, deca = 10

A. Write the correct chemical formula for these compounds. The prefix in front of the element indicates how many of that atom will be in the compound. DO NOT USE THE CROSS RULE FOR THESE COMPOUNDS.

1. carbon monoxide CO
2. carbon tetrachloride CCl_4
3. carbon dioxide CO_2
4. sulphur dioxide SO_2
5. sulphur trioxide SO_3
6. diphosphorous trioxide P_2O_3
7. carbon tetrafluoride CF_4
8. lead dioxide PbO_2
9. dihydrogen dioxide H_2O_2
10. selenium trioxide SeO_3
11. boron trichloride BCl_3
12. carbon tetraiodide CI_3
13. boron trichloride BCl_3
14. carbon tetrafluoride CF_4
15. aluminum tribromide $AlBr_3$
16. selenium trioxide SeO_3
17. nitrogen trifluoride NF_3
18. sulphur dichloride SCl_2
19. nitrogen dioxide NO_2
20. dinitrogen tetroxide N_2O_4

B. The following elements exist in nature as diatomic molecules (2 atoms per molecule). Write the formula for each of these elements.

1. hydrogen gas H_2
2. chlorine gas Cl_2
3. nitrogen gas N_2
4. oxygen gas O_2
5. fluorine gas F_2
6. bromine gas Br_2
7. iodine solid I_2

Name: KEY

Formula Assignment #6
Compound Names and Formulas
Summary

A. Write correct formula for these compounds.

1. boron chloride BCl_3
2. aluminum hydroxide $Al(OH)_3$
3. silver sulphide Ag_2S
4. iron (II) iodide FeI_2
5. copper (I) oxide Cu_2O
6. tin (IV) nitrate $Sn(NO_3)_4$
7. zinc bromide $ZnBr_2$
8. nickel (III) oxide Ni_2O_3
9. ruthenium sulphide Ru_2S_3
10. Titanium(IV) oxide TiO_2
11. magnesium carbonate $MgCO_3$
12. calcium hydroxide $Ca(OH)_2$
13. cesium sulphide Cs_2S
14. carbon tetrachloride CCl_4
15. hydrogen gas H_2
16. carbon disulphide CS_2
17. beryllium nitrate $Be(NO_3)_2$
18. sodium hydrogen carbonate $NaHCO_3$
19. water H_2O
20. lanthanum oxide La_2O_3

B. Name the following compounds correctly.

1. H_2O DIHYDROGEN MONOXIDE
2. PbI_2 LEAD (II) IODIDE
3. $MgCl_2$ MAGNESIUM CHLORIDE
4. Na_2O SODIUM OXIDE
5. $HgCl_2$ MERCURY (II) CHLORIDE
6. Ag_2O SILVER OXIDE
7. Na_3PO_4 SODIUM PHOSPHATE
8. $CaCO_3$ CALCIUM CARBONATE
9. $FeCO_3$ IRON (II) CARBONATE
10. YBr_3 YTTRIUM BROMIDE
11. Al_2O_3 ALUMINUM OXIDE
12. CO_2 CARBON DIOXIDE
13. SiO_2 SILICON DIOXIDE
14. NO_2 NITROGEN DIOXIDE
15. H_2SO_4 HYDROGES SULPHATE
16. $NaClO_3$ SODIUM CHLORATE
17. $AuCl_3$ GOLD (III) CHLORIDE
18. $BiCl_5$ BISMUTH (V) CHLORIDE
19. Rb_3N RUBIDIUM NITRIDE
20. $Ba(NO_3)_2$ BARIUM NITRATE