Chemistry 141 Name key

Dr. Cary Willard

Quiz 2a (20 points) September 7, 2010

All work must be shown to receive credit.

1. (10 points) Fill in the table below with the correct IUPAC name or formula for the compounds.

|  |  |
| --- | --- |
| IUPAC name | Chemical Formula |
| Sodium phosphite | Na3PO3 |
| Manganese(III) telluride | Mn2Te3 |
| Ammonium carbonate | (NH4)2CO3 |
| Calcium perchlorate | Ca(ClO4)2 |
| Dinitrogen pentabromide | N2Br5 |

1. (3 points)Give the number of protons, neutrons, and electrons in the following particles.
	1. $c^{+3}$

Protons 43 Neutrons 61 Electrons 40

* 1. A neutral atom of plutonium-261

Protons 94 Neutrons 167 Electrons 94

1. (3 points) Why do we describe some substances as being composed of formula units and others as being composed of molecules?

Substances with covalently bonded atoms form discrete molecules, whereas ionic compounds form crystal lattices where there is no clearly defined molecular boundry so these substances are described by formula units.

1. (4 points) Write and balance the chemical equation for the complete combustion of hexanediol, C6H14O2.

2 C6H14O2 + 17 O2 🡪 12 CO2 + 14 H2O

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1. (10 points) Fill in the table below with the correct IUPAC name or formula for the compounds.

|  |  |
| --- | --- |
| IUPAC name | Chemical Formula |
| Potassium sulfite | K2SO3 |
| Molybdenum(II) arsenide | Mo3As2 |
| Magnesium acetate | Mg(C2H3O2)2 |
| Barium hypoiodite | Ba(IO)2 |
| Disulfur trioxide | S2O3 |

1. (3 points)Give the number of protons, neutrons, and electrons in the following particles.
	1. $a^{+3}$

Protons 73 Neutrons 111 Electrons 70

* 1. A neutral atom of radium-237

Protons 88 Neutrons 149 Electrons 88

1. (3 points) Why do we describe some substances as being composed of formula units and others as being composed of molecules?

Substances with covalently bonded atoms form discrete molecules, whereas ionic compounds form crystal lattices where there is no clearly defined molecular boundry so these substances are described by formula units.

1. (4 points) Write and balance the chemical equation for the complete combustion of octanediol, C8H18O2.

2 C8H18O2 + 23 O2 🡪 16 CO2 + 18 H2O