Chemistry 141 Name key

Dr. Cary Willard

Quiz 2a (20 points) February 3, 2011

All work must be shown to receive credit.

1. (14 points) A new temperature scale has been developed. In the Grossmont temperature scale, water boils at 492oG and freezes at 58oG.



* 1. If the temperature of a block of copper is 48oC, calculate its temperature in oG.

$$48℃ above fp×\frac{434^{o}G}{100℃}=208above fp$$

$$208+ 58=266$$

* 1. At what temperature will oC and oG be the same?

$$=\left(℃×\frac{434^{o}G}{100℃}\right)+58$$

Set oG=oC=T

$$T=\left(T×\frac{434^{o}G}{100℃}\right)+58$$

$$T=4.34T+58$$

$$-3.43T=58$$

$$T=\frac{58}{-3.43}=-17$$

1. (6 points) Write and balance a chemical equation for the chemical reaction described below. If you do not know the correct formulas for the compounds you may buy them for a point apiece. Be sure to include all state labels.

Sulfuric acid is a component of acid rain formed when gaseous sulfur dioxide pollutant reacts with gaseous oxygen and liquid water to form aqueous sulfuric acid.

2 SO2(g) + O2(g) + 2 H2O(l) 🡪 2 H2SO4(aq)

Chemistry 141 Name key

Dr. Cary Willard

Quiz 2b (20 points) February 3, 2011

All work must be shown to receive credit.

1. (14 points) A new temperature scale has been developed. In the Grossmont temperature scale, water boils at 371oG and freezes at 85oG.



* 1. If the temperature of a block of copper is 48oC, calculate its temperature in oG.

$$48℃ above fp×\frac{286}{100℃}=137above fp$$

$$137+ 85=222$$

* 1. At what temperature will oC and oG be the same?

$$=\left(℃×\frac{286}{100℃}\right)+85$$

Set oG=oC=T

$$T=\left(T×\frac{286}{100℃}\right)+85$$

$$T=2.86T+85$$

$$-1.86T=85$$

$$T=\frac{85}{-1.86}=-46$$

1. (6 points) Write and balance a chemical equation for the chemical reaction described below. If you do not know the correct formulas for the compounds you may buy them for a point apiece. Be sure to include all state labels.

Nitric acid is a component of acid rain that forms when gaseous nitrogen dioxide pollutant reacts with gaseous oxygen and liquid water to form aqueous nitric acid.

4 NO2(g) + O2(g) + 2 H2O(l) 🡪 4 HNO3(aq)