Chemistry 141 Name

Cary Willard

Quiz 1a (20 points) September 4, 2008

All work must be show to receive credit. Answers should be in scientific notation and to the correct number of significant figures.

1. (7 points) A new temperature scale has been developed in which the freezing point of water is 207oN and the boiling point of water is 378oN.
   1. What is the conversion factor to change N sized degrees into C sized degrees?
   2. Convert 37oC into oN.
2. (5 points) Gems and precious stones are measured in carats, a mass unit equilivalent to 200 mg. If you have a 2.3 carat diamond in a ring, how many moles of carbon do you have?
3. (5 points) What is the empirical formula of a compound that is 60.0% oxygen and 40.0% sulfur by mass?
4. (3 points) Write the number of protons, neutrons and electrons in 16N.

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Quiz 1b (20 points) September 4, 2008

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1. (7 points) A new temperature scale has been developed in which the freezing point of water is 315oN and the boiling point of water is 436oN.
   1. What is the conversion factor to change N sized degrees into C sized degrees?
   2. Convert 37oC into oN.
2. (5 points) Gems and precious stones are measured in carats, a mass unit equilivalent to 200 mg. If you have a 2.8 carat diamond in a ring, how many moles of carbon do you have?
3. (5 points) What is the empirical formula of a compound that is 69.6% oxygen and 30.4% nitrogen by mass?
4. (3 points) Write the number of protons, neutrons and electrons in 32P.