Chemistry 141 Name key

Dr. Cary Willard

Quiz 1a (20 points) August 27, 2012

1. (4 points) Classify each substance as a pure substance or a mixture. If it is a mixture, classify it as homogenous or heterogeneous.
   1. Carbon dioxide

Pure substance

* 1. Orange juice

Mixture – heterogeneous if can see bits of pulp floating in the juice

1. (4 points) Acetone (nail polish remover) has a density of 0.7857 g/mL. What is the volume, in L, of 3.53 kg of acetone?
2. (6 points) A sample of gaseous neon atoms contains 3.41 x 1022 atoms per liter. The atomic radius of neon is 69 pm. What fraction of the space is occupied by the atoms themselves? (1 m = 1012 pm, 1 mL = 1 cm3, volume of a sphere = 4/3 r3)
3. (6 points) On the Grossmont temperature scale, water freezes at 47oG and boils at 265oG. Convert 38oC to oG.

1st determine how many oG above the freezing point

2nd adjust for the zero point

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Quiz 1b (20 points) August 27, 2012

1. (4 points) Classify each substance as a pure substance or a mixture. If it is a mixture, classify it as homogenous or heterogeneous.
   1. Beach sand

Mixture – heterogeneous if can see bits of seaweed, shell, and other things in the sand

* 1. Acetic acid

Pure substance

1. (4 points) Acetone (nail polish remover) has a density of 0.7857 g/mL. What is the volume, in L, of 6.22 kg of acetone?
2. (6 points) A sample of gaseous neon atoms contains 5.33 x 1022 atoms per liter. The atomic radius of neon is 69 pm. What fraction of the space is occupied by the atoms themselves? (1 m = 1012 pm, 1 mL = 1 cm3, volume of a sphere = 4/3 r3)
3. (6 points) On the Grossmont temperature scale, water freezes at 47oG and boils at 265oG. Convert 48oC to oG.

1st determine how many oG above the freezing point

2nd adjust for the zero point