Chemistry 141 Name

Dr. Cary Willard

Quiz 4a (20 points) March 1, 2012

All work must be shown to receive credit. Give answer to correct number of significant figures. PV=nRT, R = 0.0821 L atm/mol K = 62.4 l torr/mol K, 760 torr = 760 mm Hg = 14.7 psi = 101.3 kPa = 1 atm

1. (4 points) The air pressure in Denver, Colorado is approximately 12.1 psi. Determine the pressure in torr and atm.
2. (5 points) A syringe containing 43.2 mL of oxygen gas is cooled from 79.3oC to 20.4oC. What is the final volume of the oxygen gas?
3. (5 points) An experiment shows that a 94.2 mL gas sample has a mass of 0.420 g at a pressure of 639 mm Hg and a temperature of 51.0 oC. What is the molar mass of the gas?
4. (6 points) Consider the following reaction

2 H2O*(g)* 🡪 2 H2*(g)* + O2*(g)*

What mass of H2O is required to form 3.59 L of O2 at a temperature of 392 K and a pressure of 0.842 atm?

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Quiz 4b (20 points) March 1, 2012

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1. (4 points) The air pressure in Taos, New Mexico is approximately 12.4 psi. Determine the pressure in torr and atm.
2. (5 points) A syringe containing 68.4 mL of oxygen gas is cooled from 79.3oC to 20.4oC. What is the final volume of the oxygen gas?
3. (5 points) An experiment shows that a 94.2 mL gas sample has a mass of 0.396 g at a pressure of 831 mm Hg and a temperature of 51.0 oC. What is the molar mass of the gas?
4. (6 points) Consider the following reaction

2 H2O*(g)* 🡪 2 H2*(g)* + O2*(g)*

What mass of H2O is required to form 4.06 L of O2 at a temperature of 392 K and a pressure of 0.586 atm?