

## Chemistry 11 – Summary of Mole Conversions

1. Make the following conversions, clearly showing your steps. Include proper units in all of your work and in your answer. Express all molar masses to 1 decimal place.

a. 239.76 g of  $\text{SeO}_2 = ?$  molecules (3 marks)

Answer \_\_\_\_\_

b. 0.6048 L of  $\text{NO}_2$  (STP) = ? molecules (3 marks)

Answer \_\_\_\_\_

c.  $7.826 \times 10^{21}$  molecules of  $\text{CH}_4 = ?$  L (STP) (3 marks)

Answer \_\_\_\_\_

d. 28.732 g of  $\text{C}_3\text{H}_8 = ?$  "H" atoms (4 marks)

Answer \_\_\_\_\_

2. Calculate the density of  $\text{PCl}_3$  gas at STP. (3 marks)

Answer \_\_\_\_\_

3. The density of a gas is 2.589 g/L at STP. Calculate the molar mass of the gas. (2 marks)

Answer \_\_\_\_\_

4. What is the volume occupied by 0.2625 moles of solid silver if it has a density of 10.5 g/mL? (3 marks)

Answer \_\_\_\_\_

5. An oxide of nitrogen is known to be either NO,  $\text{N}_2\text{O}$ ,  $\text{NO}_2$  or  $\text{N}_2\text{O}_4$ . The mass of 0.800 L of this gas at STP is found to be 1.643 g.
- a. Determine the molar mass of the gas. (3 marks)

Answer \_\_\_\_\_

- b. Give the molecular formula for the gas. (1 mark) Answer \_\_\_\_\_