

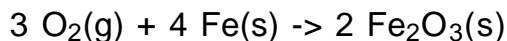
## Chem11 Stoichiometry of Gases : W.S.- 90

- 1)a) State Avogadro's hypothesis.
- b) If 1.0 mole of  $H_2$  occupies 15 L, find the volume occupied by 1.0 mole of He at the same temperature and pressure. \_\_\_\_\_ L
- c) One mole of any gas occupies \_\_\_\_\_ L at S.T.P.
- d) Use the ideal gas law to find the volume of one mole of any gas at a temperature of  $150^\circ C$  and 1.0 atm. \_\_\_\_\_

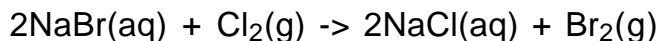
2) Find the volume at S.T.P. of :

- a) 5.0 moles of oxygen ( $O_2$ ) gas. \_\_\_\_\_
- b) 0.35 moles of sulfur dioxide ( $SO_2$ ) gas. \_\_\_\_\_
- c) 56 g of  $N_2$  gas \_\_\_\_\_
- d) 230 g of carbon dioxide gas \_\_\_\_\_

3) At S.T.P., the balanced reaction for the rusting of iron is :



- a) If 12 moles of iron rusts, how many moles of  $O_2(g)$  are required ? \_\_\_\_\_ moles.
- b) What is the mass of  $O_2(g)$  required in part a) ? \_\_\_\_\_ g.
- c) What volume of  $O_2(g)$  is required in part a) ? \_\_\_\_\_ L.
- 4) At S.T.P., a reaction to produce bromine gas is:



- a) If 0.60 mol of NaBr reacts, how many moles of  $Br_2$  gas are produced? \_\_\_\_\_
- b) Find the volume of bromine gas produced. \_\_\_\_\_

Answers : 1)a) Equal volumes of gases contain equal numbers of particles if T and P are constant., b) 15, c) 22.4, d) 35 L, 2)a) 110 L, b) 7.8 L, c) 45 L, d) 120 L, 3)a) 9.0, b) 290, c)  $2.0 \times 10^2$ , 4)a) 0.30 mol, b) 6.7 L.