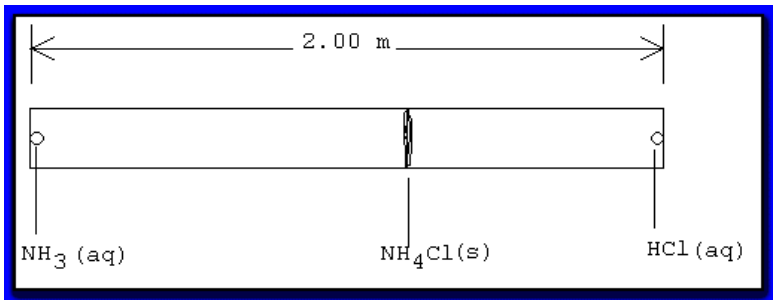
Dr. Ali El-Rayyes **Quiz #: 3**

Ser.#: solution



Q1. A lecture demonstration involved a diffusion set up, pictured above, involving NH_3 gas and HCl gas. Where these gases meet, they react to form a cloud of NH_4Cl solid. If initially the NH_3 (g) and HCl (g) are 2.00 meter apart, at what distance from the HCl side (in M) would you expect NH_4Cl (s) to form? (Molecular weights: NH_3 = 17.0, HCl = 36.5)

0.811 **0.636** **1.47** **0.215** **0.853**

Q2. Chlorine gas can be prepared in the laboratory by the reaction of solid manganese dioxide with hydrochloric acid. (The other reaction products are aqueous manganese chloride and water.) How much MnO_2 should be added to excess HCl to obtain 275 mL of chlorine gas at 5.0°C and 650 mmHg?

1.18×10^{-4} g **0.896 g** **1.22 g** **49.8 g** **8.440 g**

Q3. A gas diffuses 4.34 times faster than fluorine gas at the same temperature and pressure. The weight of a mole of the gas is_____g. MW F_2 = 37.996

2.02 **4.34** **1.42** **1.008** **1.903**

Q4. A 1.20-L container of H_2(g) at a pressure of 750 mm Hg and 24°C is connected to a 3.00-L container of He(g) at 720 mm Hg and 24°C. After mixing, what is the total gas pressure in mm Hg, with the temperature remaining at 24°C.

214 **514** **750** **720** **728**