

Quiz for Video 7 – Gas Mixtures

1. The Vapor pressure of water depends only on _____.
 - a. Atmospheric pressure
 - b. Temperature
 - c. Moles of gas
 - d. Volume
2. A student is collecting a sample of gas over water at 25 °C. What is the partial pressure of the water in the sample?
 - a. 23.8 mm Hg
 - b. 0.0313 atm
 - c. Equivalent to the vapor pressure of water
 - d. All of the above
3. A student is collecting a sample of gas over water at 25 °C. What is the partial pressure of the gas in the sample? (Assume no other gas species/contaminants are present besides the sample and water)
 - a. 0.969 atm
 - b. 1.00 atm
 - c. 0.0313 atm
 - d. Not enough information
4. Consider a mixture of two gases A and B with mole fractions: $X_a = 0.5$, $X_b = 0.5$. What percentage of the mixture does gas A occupy?
 - a. 0.5%
 - b. 5%
 - c. 50%
 - d. 100%
5. Consider a mixture of two gases A and B with mole fractions: $X_a = 0.5$, $X_b = 0.5$. If the total pressure is 5.0 atm, what is the partial pressure of gas A?
 - a. 0.5 atm
 - b. 1 atm
 - c. 2.5 atm
 - d. 5.0 atm
6. Consider a mixture of two gases A and B with mole fractions: $X_a = 0.5$, $X_b = 0.5$. If the total volume is 2.0 L, what volume occupied by gas A?
 - a. 0.5 L
 - b. 1.0 L
 - c. 2.0 L
 - d. 5.0 L
7. I have a mixture of three gases, X, Y and Z, what is the mole fraction of gas Z if the mole fraction of X is 0.30 and the mole fraction of Y is 0.50.
 - a. 0.10
 - b. 0.20
 - c. 0.50
 - d. 1.0
8. I have a mixture of three gases, X, Y and Z at a total pressure of 7.5 atm, what is the partial pressure of gas Z if the mole fraction of X is 0.30 and the mole fraction of Y is 0.50.
 - a. 0.20 atm
 - b. 1.0 atm
 - c. 1.5 atm
 - d. 2.0 atm
9. Consider a mixture of xenon and neon gases in a 15.75-L vessel at 30.0°C. The total pressure in the vessel is 6.50 atm, and the mole fraction of xenon is 0.761. What is the partial pressure of Neon?
 - a. 0.239 atm
 - b. 0.761 atm
 - c. 1.00 atm
 - d. 1.55 atm
10. Consider the conditions in the question above (Question 9). How many moles of Neon are present?
 - a. 0.761 moles
 - b. 0.984 moles
 - c. 3.25 moles
 - d. 6.50 moles