

Date Planned : __ / __ / __	Daily Tutorial Sheet-1	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration : _____

- Which of the following represents the highest pressure? ▶  
 (A) One atmosphere (B) Five pounds per square inch  
 (C) One mm of Hg (D) One hundred Pascal
- The VD of gas is 11.2. The volume occupied by 11.2g of this gas at NTP is: ▶  
 (A) 22.4 L (B) 11.2 L (C) 1 L (D) 2.2 L
- A sealed container with gas at 2.00 atm is heated from 20.0 K to 40.0 K. The new pressure is:  
 (A) 0.050 atm (B) 1.00 atm (C) 4.00 atm (D) 2.14 atm
- If 4g of oxygen diffuses through a very narrow hole, how much hydrogen would have diffused under identical conditions?  
 (A) 16 g (B) 1 g (C) 1/4 g (D) 64 g
- A gas at a pressure of 5.0 atm is heated from 0° to 546°C and is simultaneously compressed to one-third of its original volume. Hence final pressure is : ▶  
 (A) 15.0 atm (B) 30.0 atm (C) 45.0 atm (D) 5/9 atm
- For an ideal gas which of the following graphs will not be straight line when all the other variables are held constant? ▶  
 (A) P vs T (B) V vs T (C) P vs  $\frac{1}{V}$  (D) n vs T
- 1g H<sub>2</sub>, 2g He and 3g NO are contained in 1.1 L flask at 300 K. Total pressure exerted by the mixture is :  
 (A) 5.45 atm (B) 6.0 atm  
 (C) 24.63 atm (D) 134.34 atm
- At the same temperature and pressure, which of the following gas will have highest KE per mol ? ▶  
 (A) H<sub>2</sub> (B) O<sub>2</sub> (C) CH<sub>4</sub> (D) equal
- At what temperature will the total KE of 0.30 mol of He be the same as the total KE of 0.40 mol Ar at 400 K ? ▶  
 (A) 533 K (B) 400 K (C) 346 K (D) 300 K
- The molecular velocities of two gases at same temperature are u<sub>1</sub> and u<sub>2</sub>, their molar mass are m<sub>1</sub> and m<sub>2</sub> respectively. Which of the following expression is correct ?  
 (A)  $\frac{m_1}{u_1^2} = \frac{m_2}{u_2^2}$  (B) m<sub>1</sub>u<sub>1</sub> = m<sub>2</sub>u<sub>2</sub> (C)  $\frac{m_1}{u_1} = \frac{m_2}{u_2}$  (D) m<sub>1</sub>u<sub>1</sub><sup>2</sup> = m<sub>2</sub>u<sub>2</sub><sup>2</sup>
- 50 mL of H<sub>2</sub> gas diffuses through a small hole from a vessel in 20 minutes. Time taken by 40 mL of O<sub>2</sub> gas to diffuse under similar conditions will be :  
 (A) 12 min (B) 64 min (C) 8 min (D) 32 min
- The average kinetic energy of an ideal gas per molecule in SI unit at 25°C will be:  
 (A) 6.17 × 10<sup>-21</sup> kJ (B) 6.17 × 10<sup>-21</sup> J  
 (C) 6.17 × 10<sup>-20</sup> J (D) 6.17 × 10<sup>-20</sup> kJ

13. KE per unit volume is:



- (A)**  $\frac{3}{2}P$       **(B)**  $\frac{3}{2}RT$       **(C)**  $\frac{3}{2} \frac{RN}{N_0}$       **(D)**  $\frac{3}{2} \frac{RT}{n}$

14. Select correct statement(s):

- (A)** The velocity at which distribution of molecules is maximum is called most probable velocity  
**(B)** Most probable velocity of a gas is larger than root mean square velocity  
**(C)** Both statements are correct  
**(D)** None is correct

15. Select correct statement(s)

- (A)** Kinetic energy is zero at 0°C  
**(B)** RMS velocity of  $O_2$  at 27°C is  $= \sqrt{\frac{3 \times 8.314 \times 300}{32}} \text{ms}^{-1}$   
**(C)** Distribution of molecules is very small when  $u \rightarrow 0$  or  $u \rightarrow \infty$   
**(D)** All the statements are correct