

ARJUNA (NEET)

States of Matter

DPP-7

- If a gas expands at constant temperature
 - Its pressure increases
 - Kinetic energy of the molecules increases
 - Kinetic energy of the molecules remains the same
 - Number of molecules of the gas increases

- If pressure of a gas increases upto nine times keeping temperature constant, then its rms velocity will become
 - 9 times
 - 3 times
 - Remain same
 - 1/3 times

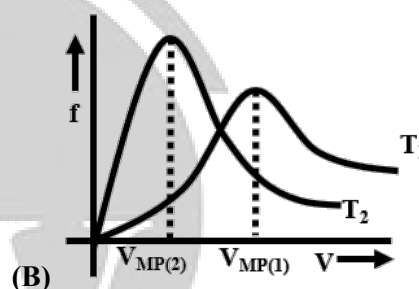
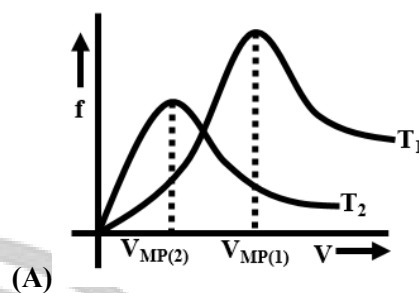
- V ml of H_2 gas diffuses through a small hole in a container in time t_1 . How much time will be required by oxygen gas for the diffusion of same volume?
 - $2t_1$
 - $4t_1$
 - $\frac{1}{2}t_1$
 - $\frac{1}{4}t_1$

- Average kinetic energy per molecule of an ideal gas is given as
 - $\overline{KE} = \frac{1}{3} m \overline{v^2}$
 - $\overline{KE} = \frac{3}{2} RT$
 - $\overline{KE} = \frac{3}{2} kT$
 - Both (2) & (3)

- Pressure exerted by one mole of an ideal gas kept in a vessel of 'V' L having root mean square speed of molecules 'v' and 'm' mass of each molecule is correctly given by the equation

- $P = \frac{1}{2} \frac{NA}{V} m v^2$
- $P = \frac{1}{3} \frac{NA}{V} m v^2$
- $P = \frac{2}{3} \frac{NA}{V} m v^2$
- $P = \frac{3}{2} \frac{NA}{V} m v^2$

- The correct graph and values of temperature in them is given as



- (A) & $T_1 > T_2$
 - (A) & $T_1 < T_2$
 - (B) & $T_1 > T_2$
 - (B) & $T_1 < T_2$
- The ratio of average speed of an O_2 molecules to the rms speed of N_2 molecule at the same temperature is
 - $\left(\frac{3\pi}{7}\right)^{1/2}$
 - $\left(\frac{7}{3\pi}\right)^{1/2}$
 - $\left(\frac{3}{7\pi}\right)^{1/2}$
 - $\left(\frac{7\pi}{3}\right)^{1/2}$
 - The ratio between rms speed of H_2 at 50 K and that of O_2 at 800 K is
 - 4
 - 2
 - 1
 - 1/4

9. Which of the following postulate of kinetic theory of gas is responsible for deviation from ideal behaviour?
- (A) Kinetic energy of the gas molecules increase with increase in temperature
 - (B) Collisions among the gas molecules are perfectly elastic
 - (C) There is no forces of attraction or repulsion among gas molecules
 - (D) Molecules in a gas follow zig-zag path
10. What is average kinetic energy of 1 mole of SO_2 at 300 K?
- (A) 4578 J/mol
 - (B) 3134 J/mol
 - (C) 3741 J/mol
 - (D) 4173 J/mol

ANSWERS KEY

- | | |
|--------|---------|
| 1. (C) | 6. (C) |
| 2. (C) | 7. (B) |
| 3. (B) | 8. (C) |
| 4. (C) | 9. (C) |
| 5. (B) | 10. (C) |



Note - If you have any query/issue



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