

NEET KINETIC THEORY — KINETIC THEORY OF AN IDEAL GAS (PRESSURE OF A GAS) — PYQS

Max. Marks: 16

Questions: 4

Section A (MCQ) — 4 questions

- Q.1** A container has two chambers of volumes $V_1 = 2$ litres and $V_2 = 3$ litres separated by a partition made of a thermal insulator. The chambers contain $n_1 = 5$ and $n_2 = 4$ moles of ideal gas at pressures $p_1 = 1$ atm and $p_2 = 2$ atm, respectively. When the partition is removed, the mixture attains an equilibrium pressure of [NEET (UG) 2025]
- (1) 1.4 atm (2) 1.8 atm (3) 1.3 atm (4) 1.6 atm

Scan or tap for the full solution



- Q.2** An oxygen cylinder of volume 30 litre has 18.20 moles of oxygen. After some oxygen is withdrawn from the cylinder, its gauge pressure drops to 11 atmospheric pressures at temperature 27°C . The mass of the oxygen withdrawn from the cylinder is nearly equal to:

[Given, $R = \frac{100}{12} \text{ J mol}^{-1} \text{ K}^{-1}$, and molecular mass of $\text{O}_2 = 32$, 1 atm pressure = $1.01 \times 10^5 \text{ N/m}^2$]

[NEET (UG) 2025]

- (1) 0.116 kg (2) 0.156 kg
(3) 0.125 kg (4) 0.144 kg

Scan or tap for the full solution



- Q.3** Match **Column - I** and **Column - II** and choose the correct match from the given choices.

[NEET (UG) 2021]

Column - I		Column - II	
A.	Root mean square speed of gas molecules	P.	$\frac{1}{3} n m \bar{v}^2$
B.	Pressure exerted by ideal gas	Q.	$\sqrt{\frac{3RT}{M}}$
C.	Average kinetic energy of a molecule	R.	$\frac{5}{2} RT$
D.	Total internal energy of 1 mole of a diatomic gas	S.	$\frac{3}{2} k_B T$

- (1) (A) - (R), (B) - (Q), (C) - (P), (D) - (S)
(2) (A) - (R), (B) - (P), (C) - (S), (D) - (Q)
(3) (A) - (Q), (B) - (R), (C) - (S), (D) - (P)
(4) (A) - (Q), (B) - (P), (C) - (S), (D) - (R)

Scan or tap for the full solution



- Q.4** In a vessel, the gas is at pressure P . If the mass of all the molecules is halved and their speed is doubled, then the resultant pressure will be

[NEET 2013 (Karnataka)]

- (1) $2P$ (2) P (3) $P/2$ (4) $4P$

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4									
Ans.	4	1	4	1									