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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 After some oxygen is withdrawn from the cylinder, its gauge pressure drops to 11 atmospheric pressures at temperature 27°C. The mass of the oxygen withdrawn from the cylinder is nearly equal to: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, $R = \frac{100}{12}\ J\,mol^{-1}K^{-1}$, and molecular mass of O_2 = 32, 1 atm pressure = $1.01 \times 10^5\ N/m^2$]

[NEET (UG) 2025]

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

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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.	$\frac{1}{3}nm\bar{v}^2$
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.	$\frac{3}{2}k_BT$

(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

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ANSWER KEY

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