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NEET KINETIC THEORY — LAW OF EQUIPARTITION OF ENERGY — PYQS

Max. Marks: 12 **Questions:** 3

Section A (MCQ) — 3 questions

Q.1 According to the law of equipartition of energy, the number of vibrational modes of a polyatomic gas of constant $\gamma = \frac{C_P}{C_V}$ is (C_P and C_V are the specific heat capacities of the gas at constant pressure and constant volume, respectively):

[RE-NEET (UG) 2024]

(1) $\frac{4+3\gamma}{\gamma-1}$ (2) $\frac{3+4\gamma}{\gamma-1}$ (3) $\frac{4-3\gamma}{\gamma-1}$ (4) $\frac{3-4\gamma}{\gamma-1}$

Scan or tap for the full solution

Q.2 The average thermal energy for a mono-atomic gas is : (k_B is Boltzmann constant and T absolute temperature) [NEET (UG) 2020]

(1) $\frac{3}{2}k_BT$ (2) $\frac{5}{2}k_BT$ (3) $\frac{7}{2}k_BT$ (4) $\frac{1}{2}k_BT$

Scan or tap for the full solution

Q.3 A gas mixture consists of 2 moles of O_2 and 4 moles of Ar at temperature T. Neglecting all vibrational modes, the total internal energy of the system is

[NEET 2017]

(1) 15 RT (2) 9 RT (3) 11 RT (4) 4 RT

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ANSWER KEY

Ques.	1	2	3								
Ans.	**3**	**1**	**3**								