

Model question paper -2023

XI – physics (E/M)

Unit -9

Total mark : 20 m

PART – A (5 X 1 = 5M)

Choose the best correct answer

1. The pressure is also equal to of internal energy per unit volume
a) $2/3$ b) $1/3$ c) $3/2$ d) $1/2$
2. Brownian motion increases with increasing
a) Temperature b) pressure c) number of mole d) density
3. Which of the following gases will have least RMS speed at a given temperature ?
a) HI b) HCl c) Ar d) CO_2
4. For a mono atomic molecule f
a) 2 b) 5 c) 7 d) none of the above
5. Each degree of freedom will getKT energy
a) $1/2$ b) $3/2$ c) $5/2$ d) $2/3$

PART – B (5 X 2 = 10M)

Answer any FIVE Questions

6. Define the term degrees of freedom
7. State the law of equipartition of energy
8. Why moon has no atmosphere ?
9. What is the reason for Brownian motion ?
10. Write down the postulates of kinetic theory of gases
11. Why no hydrogen in Earth's atmosphere
12. A football at 27°C has 0.5 mole of air molecules calculate the internal energy of air in the ball



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PART – C (1 X 5 = 5M)

Answer ALL questions

12.a) Derive the expression of pressure exerted by the gas on the walls of the container

(or)

b) Derive the expression for mean free path of the gas

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