. INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF PHYSICS
CLASS XI

CLASS-XI UNIT-IX BEHAVIOUR OF PERFECT GAS & KINETIC THEORY OF GASES WORK SHEET-9

SECTION-A CONCEPTUAL & APPLICATION TYPE QUESTIONS

1. Why do the gases at low temperature & high pressure show large deviations from ideal behavior
2. Define absolute zero, according to kinetic interpretation of temperature.
3. What do you mean by the r.m.s. speed of the molecules of a gas ? Is r.m.s. speed same as the average speed ?
4. Name two factors on which the degrees of freedom of a gas depend.

SECTION-B NUMERICAL QUESTIONS

1. Four molecules of a gas have speeds 2,4,6,8 km/s respectively. Calculate their average speed & r.m.s. speed.
2. Calculate the K.E. per molecule & also r.m.s. velocity of a gas at 127^0C. Given $k_B=1.38\times10^{-23}$ J/molecule K & mass per molecule of the gas=6.4×10^{-27}kg.
3. Calculate the temperature at which r.m.s. velocity of a gas molecules is double its value at 27^0 C, pressure of the gas remaining the same.
4. Calculate the number of degrees of freedom in 15 cm^3 of nitrogen at S.T.P.