INDIAN SCHOOL MUSCAT

CLASS :……XI……

SUBJECT:……PHYSICS……..

WORKSHEE : 9

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DATE :……

TOPIC/SUB-TOPIC :……CHAPTER :13 **BEHAVIOUR OF PERFECT GAS & KINETIC THEORY OF GASES**……

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 Name two factors on which the degrees of freedom of a gas depend.

4 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 ?

5 Which is greater Cp or Cv ?Justify.

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 ga s=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.