INDIAN SCHOOL DARSAIT
DEPARTMENT OF PHYSICS

Subject : Physics	**Chapter** : Kinetic Theory	**Worksheet No**. 13
Resource Person : Mrs. Jayalakshmi Ratish		**Date** :
Name of the Student :_____	**Class & Division** : XI A/B	**Roll Number** : ___

1. Define absolute zero, according to kinetic interpretation of temperature? 1

2. An ideal gas has molar specific heat 5R/2 at constant pressure. If 300 J of heat is gives to 2 moles of gas at constant pressure, find the change in temperature. (As. 7.2°C) 1

3. When an auto mobile travels for a long time, the air pressure in the tyres increases slightly. Why? 1

4. The absolute temperature of a gas is increased 4 times its original value. What will be the change in r.m.s. velocity of its molecules? (As. V_{rms}) 1

5. A gas in a closed vessel is at the pressure Po. If the masses of all the molecules be made half and their speeds be made double, then find the resultant pressure? (As. $2P_0$) 1

6. Molar volume is the volume occupied by 1 mole of any ideal gas at STP (1STP = 1 atm. pressure). Show that it is 22.4 litres (take R = 8.31 J $mol^{-1}K^{-1}$). (As. 22.4 x $10^{-3}m^3$) 2

7. What is the total kinetic energy of 2 g of nitrogen at 300 K? Given : molecular weight of nitrogen =28. 2

8. What are the basic assumptions of Kinetic Theory of gases? 2

9. What will be the rms velocity of a gas if velocities of the molecules are v, 2v, 3v, 4v & 5v. 2

10. Calculate the final volume of gas at the specified conditions assuming the temperature and mass remain constant. (a) V_1 = 200 cm^3, P_1 = 600 mm of Hg and P_2 = 800 mm of Hg. (As. 150 cm^3) 2