INDIAN SCHOOL DARSAIT
DEPARTMENT OF PHYSICS

Subject : Physics	Topic : Revision worksheet Worksheet No. 15
Resource Person : Mrs. Jayalakshmi Ratish	Date : _____
Name of the Student :_____	Class & Division : XI A/B Roll Number : __

1   Define the following –

(a) isothermal process

(b) molar specific heat capacity

(c) quasi-static process

(d) regelation

(e) adiabatic process

(f) triple point

(g) sublimation

(h) resonance

(i) damped oscillation

(j) SHM (Simple Harmonic Motion)

(k) surface tension

(l) surface energy

(m) magnus effect

(n) Doppler's effect

(o) angle of contact

(p) specific heat capacity

(q) standing waves

(r) beats

2   State following theorems/laws-

(a) Bernoulli's theorem for a non-viscous liquid.

(b) Law of equipartition of energy

(c) Laws of Thermodynamics

(d) Newton's law of cooling

(e) Law of continuity of fluids

(f) Laws of Black body radiation

(g) Stoke's law

(h) Pascal's Law

3   Derivations

(a)Derive an expression for the ascent of a liquid in a capillary tube.

(b) What is the principle of a refrigerator? Explain working the working of a refrigerator with block diagram.

(c) Describe Carnot's heat engine. Draw the PV indicator diagram for the cycle of events between two temperatures T_1 and T_2.

(d) What are the basic assumptions of kinetic theory of gases? On their basis, derive an expression for the pressure exerted by an ideal gas.

(e) Find the expressions of velocity and acceleration in SHM.

(d) Prove Bernoulli's Theorem

(e) Explain the kinetic interpretation of Temperature

(f) Obtain excess pressure within (a) a liquid drop, (b) an air bubble within a liquid and (c) soap bubble

(g) Obtain the expression for mean free path of gas molecules.

(h) Derive the ratio of molar specific heat capacities for a diatomic gas.

(g) Explain the formation of beats.

(h) Discuss Newton's formula for velocity of sound in air. What correction was made to it by Laplace and why?

(i) Discuss the formation of harmonics in a stretched string. Show that in case of a stretched string the first three harmonics are in the ratio 1:2:3.