# St. Mary's School, Dwarka <br> Holiday Homework <br> Class - XI <br> Subject: Physics <br> Week 2 <br> Worksheet 2 

## Objective:

- Revision of concepts
- Skills to carry out research and develop scientific aptitude
- Encouraging learning through experiences


## Instructions:

- Neatly write all the answers in your Physics note book.
- Attempt the questions keeping in mind the weightage of each question.
- Assignment 'Summer Holiday Homework' will be created on TEAMS. PDF of handwritten work should be uploaded on it.
M.M : 25

Q1. Name at least four physical quantities whose dimensions are $\mathrm{ML}^{2} \mathrm{~T}^{-2}$.
Q2. (i) Write the dimensional formula of the following physical quantities (a) Stress (b) Coefficient of viscosity.

Q3. (i)What is a photon? Does it have dimensional formula? Justify. (ii) Write the dimensional formula corresponding to the unit Calorie.

Q4. Force $(F)$ and density $(d)$ are related as $F=\alpha /(\beta+\sqrt{ } d)$, find the dimensions of $\alpha$ and $\beta$.
Q5) Find the volume of a cube of side 1 cm and convert it into $\mathrm{m}^{3}$.
Q6.Write the dimensions of the following:
(i) Gravitational potential
(ii) Variable force
(iii) Pressure gradient
(iv) Moment of inertia
(v) buoyant force
(vi) Angular Momentum

Q7. (i) Are all dimensionally correct equations numerically correct? Give one example.
(ii)Define specific heat and latent heat. Do specific heat and latent heat have the same dimensions? Justify 3

Q8. (i) Find the surface area in $(\mathrm{mm})^{2}$ of a solid cylinder of radius 2 cm and height 10 cm .
(ii) A vehicle moving with a speed of $18 \mathrm{~km} / \mathrm{h}$ will cover how many meters in 1 sec .

Q9 List two points of difference amongst Gravitational force, Electromagnetic force, Electrostatic force . 3
Q10. Fill in the blanks:
$(0.5 \times 4+1=3)$
i. Physical quantities which are independent and not defined in terms of other are called $\qquad$ .
ii. Relation between astronomical unit and light year is $\qquad$ .
iii. The apparent shift in the position of an object with respect to another when one shift his sidewise is known as $\qquad$ _.
iv. SONAR works on the principle of $\qquad$ .
v. Dimensional formulae of universal gas constant $(R)$ is $\qquad$ .

