INDIAN SCHOOL AL BURAIMI
PHYSICS
Chapter 1-UNITS AND MEASUREMENT
Worksheet I

NAME: Roll No:
STD: XI Date:14.04.26

## MULTIPLE CHOICE QUESTIONS(MCQs)

1. Which of the following pairs of physical quantities does not have the same dimensional formula? **(NCERT EXEMPLAR)**

   (a) Work and energy (b) Angular momentum and Planck's constant

   (c ) Tension and surface tension (d) Impulse and linear momentum

**2.** The dimension of universal gravitational constant is **(NCERT EXEMPLAR)**

**(a)** $[M^{-1} L^{3} T^{-2}]$ (b) $[M^{1}L^{1} T^{-2}]$ (c) $[M^{1}L^{2}T^{-2}]$ (d) $[M^{1}L^{-1}T^{-1}]$

## SHORT ANSWER TYPE QUESTION

**3.** Give the derived units of (i) linear momentum (ii) force (iii) stress (iv)surface tension (v) torque (vi) power

**4.** Find the dimensions of the following physical quantities

**(i)** Work (ii) pressure (iii)Universal gravitational constant (iv)impulse (v)force (vi) density

**5.** Find the dimensions of a/b in the equation $F= a\sqrt{x} + bt^2$,where F is the force ,x is the distance and t is the time

## LONG ANSWER TYPE QUESTION

**6** The volume of a liquid flowing out per second of a pipe of length l and radius r is written by a student as $v= \frac{\pi}{8} Pr^4/\eta l$

where P is the pressure difference between the two ends of the pipe and $\eta$ is the coefficient of viscosity of the liquid having dimensional formula $[ML^{-1}T^{-1}]$.Check whether the equation is dimensionally correct or not

**7.** The dimensional formula of a a quantity X =g R where g and R be the acceleration due to gravity and radius of Earth is

(a) $[L^{2}T^{=1}]$ (b) $[L^{2}T^{-2}]$ (c ) $[L^{1}T^{=1}]$ (d)$[L^{1}T^{-2}]$

## ASSERTION AND REASONING

**(a)Both A and R are true and R is the correct explanation**

**(b) Both A and R are false**

**(c ) A is true but R is false**

**(d) A is false but R is true**

8. **Assertion (A):** Special functions such as trigonometric,logarithmicand exponential functions are dimensionless

   **Reason (R) :**A pure number ,ratio of similar physical quantities such as angle and Refractive index have some dimensions

9. **Assertion (A):**Force cannot be added with pressure

   **Reason(R):**The dimensions of force and pressure are different

## CASE STUDY QUESTIONS

10. System of units: It is a collection of units in which certain units are chosen as fundamental and all others are derived from them.CGS,MKS,FPS AND SI are the system of units.Seven base units are meter,second,kilogram,Kelvin,cCandela,mole and Ampere

    (i) Which of the following is not the name of derived physical quantity

    (a)Kilogram (b) Density (c ) Impulse (d) Energy

    (ii) The weight of a body is 23 g.This statement is not correct because

    (a) The correct symbol for the unit of weight has not been used.

    (b) The correct symbol for gram is gm

    (c) The weight should be expressed in kg

    (d) Of some other than those given above