

ATOMIC ENERGY EDUCATION SOCIETY

Distant Learning Programme

Class XI Subject: Physics

Work Sheet of Chapter: Unit & Measurement (Module 1/4)

- The base quantity among the following is:
(1) Speed (2) Weight (3) Length (4) Area
- One astronomical unit is a distance equal to
(1) 9.46×10^{15} m (2) 1.496×10^{11} m (3) 3×10^8 m (4) 3.08×10^{16} m
- Which of the following is not a unit of time?
(1) Second (2) Minute (3) Hour (4) Light year
- Fill in the blanks
(a) The volume of a cube of side 1 cm is equal tom³
(b) A vehicle moving with a speed of 18 km h⁻¹ covers.....m in 1 s
© The relative density of lead is 11.3. Its density isg cm⁻³ or.....kg m⁻³.
- A calorie is a unit of heat or energy and it equals about 4.2 J where 1J = 1 kg m² s⁻². Suppose we employ a system of units in which the unit of mass equals α kg, the unit of length equals β m, the unit of time is γ s. Show that a calorie has a magnitude $4.2 \alpha^{-1} \beta^{-2} \gamma^2$ in terms of the new units.
- A new unit of length is chosen such that the speed of light in vacuum is unity. What is the distance between the Sun and the Earth in terms of the new unit if light takes 8 min and 20 s to cover this distance?
- Calculate the angle of (a) 1^o (degree) (b) 1' (minute of arc or arcmin) and (c) 1" (second of arc or arc second) in radians. Use $360^{\circ} = 2\pi$ radian, 1degree =60' and 1' = 60 "
- The moon is observed from two diametrically opposite points A and B on Earth. The angle θ subtended at the moon by the two directions of observation is 1^o 54'. Given the diameter of the Earth to be about 1.276×10^7 m, compute the distance of the moon from the Earth.
- What do you mean by 1 radian & 1 steradian.
- Write the equivalent meter unit value for following :
(a) 1 Fermi (b) 1 Light year (c) 1 parsec