

Very Short Answer Questions

- 1) Define one astronomical unit
- 2) One micron = _____ meter
- 3) How many fermi are there in one meter
- 4) Write the abbreviation for RADAR, SONAR, and LASER
- 5) Obtain the Dimensional formula & give units for the following physical quantities.
 - a) Acceleration
 - b) Areal Velocity
 - c) Co-efficient of viscosity
 - d) Force
 - e) Impulse
 - f) Power
 - g) Moment of Inertia
 - h) Young's modulus
 - i) Gravitational Constant
 - j) Planck's constant
- 6) Mention three physical quantities that have no dimensions.
- 7) Write the SI unit of temperature and electric current.

ANSWERS

- 1) One astronomical unit (AU) is the average distance between the sun and the earth. i.e. $1 \text{ AU} = 1.5 \times 10^{11} \text{ m}$
- 2) One micron = $1 \times 10^{-4} \text{ cm} = 1 \times 10^{-6} \text{ m}$
- 3) One Fermi = $1 \times 10^{-15} \text{ m}$
- 4) RADAR – Radio wave Detection And Ranging
SONAR – Sound wave Detection And Ranging
LASER – Light Amplification by Stimulated Emission of Radiation
- 5)
 - a) Acceleration = Velocity/time – LT^{-1}
 - b) Areal Velocity = Area/time – L^2T^{-1}
 - c) Co-efficient of viscosity – $\text{ML}^{-1}\text{T}^{-1}$
 - d) Force $F = ma$ – MLT^{-2}
 - e) Impulse = Linear momentum – MLT^{-1}
 - f) Power = Work/time – ML^2T^{-3}
 - g) Moment of Inertia $I = MR^2$ – ML^2
 - h) Young's modulus = $\text{ML}^{-1}\text{T}^{-2}$
 - i) Gravitational Constant G – $\text{M}^{-1}\text{L}^3\text{T}^{-2}$
 - j) Planck's constant h – ML^2T^{-1}
- 6) Physical quantities which don't have dimension
 - 1) Angle – $\text{M}^0\text{L}^0\text{T}^0$
 - 2) Strain – $\text{M}^0\text{L}^0\text{T}^0$ (Strain = change in length/original length)
 - 3) Relative density – $\text{M}^0\text{L}^0\text{T}^0$ (density of the material/density of the water)
- 7) Temperature SI Unit – Kelvin
Current SI Unit – ampere.