

Probable Question
Sub: Engineering Physics

All Questions carries TWO marks

1. (a) What is the basic units in SI system.
- (b) State triangle law of vector addition.
- (c) What is relation between linear velocity and angular velocity?
- (d) Define frequency of wave.
- (e) Define work and write its SI unit?
- (f) Define universal gravitational constant?
- (g) Define Mechanical Equivalent of heat
- (h) Define unit pole.
- (i) State Lenz's Law.
- (j) What is optical fibre?

All Questions carries FIVE marks

2. (a) Check the correctness of the formula

$$S = ut + \frac{1}{2}at^2$$

- (b) Distinguish between Longitudinal wave and Transverse wave.
 - (c) State and explain first law of thermodynamics.
 - (d) Define magnetic lines of force and write its properties.
 - (e) Draw a neat diagram showing refraction of light through prism.
 - (f) Define critical angle and total internal reflection.
 - (h) The volume of a lead ball is 10^{-5} m^3 at 0°C and $1.0064 \times 10^{-5} \text{ m}^3$ at 50°C . Calculate the coefficient of linear expansion.
3. Define coefficient of thermal expansions and Derive the relation between them. (10)
 4. Find out the expression for displacement, velocity and acceleration for a particle executing simple harmonic motion. (10)
 5. Define coefficient of friction and state the laws of limiting friction. (10)
 6. State Kirchhoff's law and derive the expression for balanced condition of Wheatstone Bridge. (10)
 7. Derive the expression for Maximum height, Total time of flight and Horizontal range for a projectile fired at angle θ . (10)