

TN Board Class 11 Physics Important Questions

1. In a series of successive measurements in an experiment, the readings of the period of oscillation of a simple pendulum were found to be 2.63 s, 2.56 s, 2.42 s, 2.71 s and 2.80 s. Calculate (i) the mean value of the period of oscillation (ii) the absolute error in each measurement (iii) the mean absolute error (iv) the relative error (v) the percentage error. Express the results in proper form.
2. Derive equations of uniformly accelerated motion by calculus method.
3. Discuss uniform circular motion.
4. Derive velocities after the collision in terms of velocities before collision in elastic collision in one dimension case.
5. State and prove work-kinetic energy theorem.
6. A uniform rod of mass M and length l makes a constant angle θ with an axis of rotation which passes through one end of the rod. Find the moment of inertia about this axis.
7. Discuss the bending of a cyclist in curves.
8. Consider a system of two identical particles having mass m . If one of the particles of mass m is pushed towards the center of mass of the particles through a distance x , by what amount the other particle should move so as to keep the center of mass of particles at the original position?
9. Calculate the potential energy of the object of mass m at a height h .
10. Write down any three examples to explain the origin of centripetal force.
11. Explain Lami's theorem.
12. Derive expression for maximum height, time of flight and range of a projectile.
13. Define potential energy.
14. What is meant by (i) inertial frame of reference and (ii) non-inertial frame of reference
15. Write any two limitations of dimensional analysis. Give relevant examples.
16. Write down the number of significant figures in the following: (i) 0.007 (ii) 400.
17. The position vector of a particle has length 1 m and makes 30° with the x – axis. What are the lengths of the x and y components of the position vector?
18. Write down the coefficient of restitution for the following cases:

(i) Perfectly elastic collision

(ii) Perfect inelastic collision

(iii) A ball rebounding from a floor

19. Derive an expression for total energy of the particle executing SHM.

20. What is Doppler effect?

