CAMBRIAN PUBLIC SCHOOL,
Kanke Road, Ranchi

Summer Vacation Assignment – Class 11

Subject- Physics

1. Define dimensional formula. Write the dimensional formula of force, Angular speed , Planks constant , Universal gravitational constant (G) , Stress , Strain & Kinetic energy .
2. What is meant by least count of an instrument? State the process to calculate the least count of a) vernier calliper and. b) Screw gauge .
3. What is instantaneous speed ,write it's mathematiexpressuin . Differentiate between speed and velocity.
4. A car travels 60 km in 2 hours. Calculate its average velocity.
5. Define angular displacement , angular speed and angular acceleration and write threir SI unit.
6. Using dimensional analysis, prove that the unit of pressure is $[ML^{-1}T^{-2}]$.
7. The length of a rod is measured as 25.4 cm with a possible error of ±0.1 cm. Find the percentage error.
8. A particle moves with velocities 10 m/s, 20 m/s, and 30 m/s for equal intervals of time. Find the average velocity.
9. A wheel rotates at 120 revolutions per minute. Calculate its angular speed in rad/s.
10. A body starts from rest and accelerates uniformly at 4 m/S^2 .Find its velocity after 5 seconds.
11. Using dimensional analysis, derive the relation for time period of a simple pendulum assuming it depends on length and acceleration due to gravity.
12. A student measures the side of a cube as 5+-0.1 cm. Calculate the percentage error in its volume.
13. A man walks 3 km east in 30 minutes and then 4 km north in 30 minutes. Find:
    a) Total distance. b) Displacement. c) Average velocity
14. The angular speed of a rotating fan decreases uniformly from 20 rad/s to 5 rad/s in 5 seconds. Find the angular acceleration.
15 . A train moving at 15 m/s is brought to rest uniformly in 30 seconds. Calculate:
a) Retardation. b) Distance travelled before stopping