

UNIT-8

MOTION

1. Define uniform velocity and uniform acceleration?
2. Derive the second equation of motion graphically?
3. A car moving with a certain velocity comes to a halt if the retardation was 5m/s^2 , find the initial velocity of the car?
4. A ball starts from rest and rolls down 16m down an inclined plane in 4 s
(a) What is the acceleration of the ball? (b) What is the velocity of the ball at the bottom of the incline?
5. Calculate the acceleration and distance of the body moving with 5m/s^2 which comes to rest after traveling for 6seconds ?
6. A body is dropped from a height of 320m. The acceleration due to the gravity is 10m/s^2 ? (a) How long does it take to reach the ground? (b) What is the velocity with which it will strike the ground?
7. A boy throws a stone upward with a velocity of 60m/s . (a) How long will it take to reach the maximum height ($g = -10\text{m/s}^2$)? (b) What is the maximum height reached by the ball? (c) How long will it take to reach the ground?
8. A body is moving with a velocity of 12m/s and it comes to rest in 18m, what was the acceleration?
9. A body starts from rest and moves with a uniform acceleration of 4m/s^2 until it travels a distance of 800m, find the final velocity?
10. Differentiate between scalars and vectors?