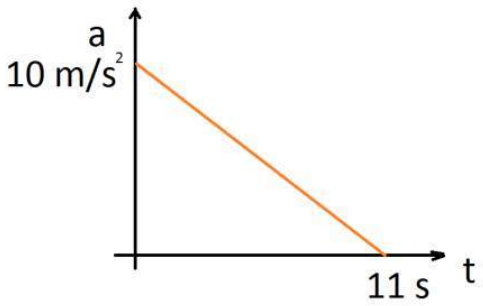
Example: A particle starts from rest. Its acceleration (a) vs time (t) is as shown in the Figure. The maximum speed of the particle will be



a) 110 m/s

b) 55 m/s

c) 550 m/s

d) 660 m/s

{ Hint : Writing the equation of the graph , we get $\frac{a}{10} + \frac{t}{11} = 1$

$\Rightarrow a = \frac{10}{11}(11 - t)$

Integrating, (we will assume initial velocity to be zero as the body starts from rest.)

$v = \frac{10}{11}(11t - \frac{1}{2}t^2)$

Substituting $t = 11s$

$v_{11s} = 55m/s$

Answer: b) is the correct answer }