

2008

1. (a) A ball is thrown vertically upwards with an initial velocity of 39.2 m/s.

Find (i) the time taken to reach the maximum height

(ii) the distance travelled in 5 seconds.

(i)

$$v = u + ft$$

$$0 = 39.2 - 9.8(t)$$

$$t = 4 \text{ s}$$

(ii)

$$\begin{aligned} s &= ut + \frac{1}{2} ft^2 \\ &= 39.2(4) - 4.9(16) \\ &= 78.4 \text{ m} \end{aligned}$$

fifth second :

$$\begin{aligned} s &= ut + \frac{1}{2} ft^2 \\ &= 0 + 4.9(1) \\ &= 4.9 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{total distance} &= 78.4 + 4.9 \\ &= 83.3 \text{ m} \end{aligned}$$

5	
5	
5	
5	20