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<https://physicsaholics.com/home/courseDetails>

Video Solution on YouTube:-

<https://youtu.be/TQmJSIfjdDE>

Written Solution on Website:-

<https://physicsaholics.com/note/notesDetailis/85>

- Q 1. A dog walking to the right with a velocity of 1.5 m/s sees a cat and speeds up with a constant rightward acceleration of magnitude  $12 \text{ m/s}^2$ . What is the velocity of the dog after speeding up for 3.0 m?  
(a) 4 m/s (b) 8.6 m/s (c) 12.6 m/s (d) 16.6 m/s
- Q 2. A particle moving in straight line experience constant acceleration for 20 second after starting from rest. If it travel a distance  $S_1$  in the first 10 seconds and distance  $S_2$  in the next 10 seconds then find the relation between  $S_1$  and  $S_2$ :  
(a)  $S_1 = 3S_2$  (b)  $S_1 = \frac{3}{2}S_2$   
(c)  $S_2 = 3S_1$  (d)  $S_2 = \frac{3}{2}S_1$
- Q 3. A car travels a distance 100m with a constant acceleration and average velocity of 20 m/s. The final velocity acquired by the car is 25 m/s. Find the initial velocity.  
(a) 15 m/s (b) 30 m/s  
(c) 10 m/s (d) zero
- Q 4. A body starting from rest is travelling on a straight road with constant non-zero acceleration. If the speeds after covering distances  $S_1$  and  $S_2$  (after  $S_1$ ) are  $V_1$  and  $V_2$  respectively. If  $\frac{V_2}{V_1} = 2$ , then  $\frac{S_2}{S_1} = N$ . Find N?  
(a) 1 (b) 2  
(c) 1/2 (d) 3
- Q 5. A bike moving along a straight road covers 35 m in the 4th second and 40 m in the 5th second. What is its initial velocity: (if the acceleration is assumed to be uniform )?  
(a) 5 m/s (b) 10 m/s  
(c) 17.5 m/s (d) 15.5 m/s
- Q 6. A truck moving on a straight road with constant acceleration covers the distance between two points 180 m apart in 6 seconds. Its speed as it passes the second points 45 m/s. Find its speed when it was at the first point:  
(a) 5 m/s (b) 10 m/s  
(c) 15 m/s (d) 20 m/s
- Q 7. A car accelerates uniformly from 18 km/h to 36 km/h in 5 seconds. Calculate the acceleration of truck:  
(a)  $1 \text{ m/s}^2$  (b)  $1 \text{ km/h}^2$   
(c)  $3 \text{ m/s}^2$  (d)  $2.5 \text{ m/s}^2$



- Q 8. A body starts from rest and travels with a uniform acceleration of  $3 \text{ m/s}^2$  and then decelerates at a uniform rate of  $2 \text{ m/s}^2$  again to come to rest. Total time of travel is 10 sec. find the maximum velocity during the journey:  
(a) 10 m/s (b) 12 m/s  
(c) 15 m/s (d) 27 m/s
- Q 9. Consider a train which can accelerate with an acceleration of  $20 \text{ cm/s}^2$  and slow down with deceleration of  $100 \text{ cm/s}^2$ . Find the minimum time for the train to travel between the stations 2.7km apart:  
(a) 90 s (b) 180 s  
(c) 160 s (d) 240 s
- Q 10. An automobile travelling with the speed of 72 km/h, is stopped within a distance of 20m, by applying brakes. Determine the distance travelled in the first second:  
(a) 10 m (b) 25 m  
(c) 15 m (d) 35 m
- Q 11. A body starting from rest is moving with a uniform acceleration of  $8 \text{ m/s}^2$ . Then the distance travelled by it in 5th second will be:  
(a) 40 m (b) 36 m  
(c) 100 m (d) zero
- Q 12. A motor cycle moving with speed of 15m/s is subject to an acceleration of  $0.2 \text{ m/s}^2$  in the direction of motion. Calculate the speed of motorcycle after 10 second,  
(a) 7 m/s (b) 10 m/s  
(c) 13 m/s (d) 17 m/s

## Answer Key

<b>Q.1) b</b>	<b>Q.2) c</b>	<b>Q.3) a</b>	<b>Q.4) d</b>	<b>Q.5) c</b>
<b>Q.6) c</b>	<b>Q.7) a</b>	<b>Q.8) b</b>	<b>Q.9) b</b>	<b>Q.10) c</b>
<b>Q.11) b</b>	<b>Q.12) d</b>			