



Video Solution on Website:- <https://physicsaholics.com/home/courseDetails/36>

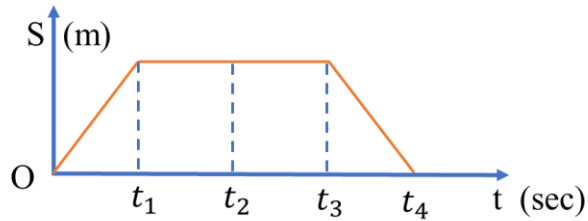
Video Solution on YouTube:- https://youtu.be/6eBT8_y4PTE

Written Solution on Website:- <https://physicsaholics.com/note/notesDetails/70>

- Q 1. Find the velocity of particle if the position of particle is given as $x = (3t^2 - 2) \text{ m}$?
- (a) $v = (3t - 1) \text{ m/s}$
 - (b) $v = (6t - 1) \text{ m/s}$
 - (c) $v = (6t) \text{ m/s}$
 - (d) None of these
- Q 2. Find the acceleration of particle if the position of particle is given as $x = (3t^2 - 2) \text{ m}$?
- (a) $a = 6 \text{ m/s}^2$
 - (b) $a = 3 \text{ m/s}^2$
 - (c) $a = 6t \text{ m/s}^2$
 - (d) None of these
- Q 3. Find the acceleration of particle if the velocity of particle is given as $V = (16t^2 - 2t + 3) \text{ m/s}$?
- (a) $a = (32t - 2) \text{ m/s}^2$
 - (b) $a = (16t^2 - 2t) \text{ m/s}^2$
 - (c) $a = 32t \text{ m/s}^2$
 - (d) None of these
- Q 4. Find the acceleration of particle at $t = 2 \text{ sec}$ if the position of particle is given as $x = (t^2 - 2t + 1) \text{ m}$?
- (a) $a = 4 \text{ m/s}^2$
 - (b) $a = 2 \text{ m/s}^2$
 - (c) $a = 3 \text{ m/s}^2$
 - (d) None of these
- Q 5. Find the acceleration of particle at $t = 2 \text{ sec}$ if the velocity of particle is given as $v = (t^2 - 2t + 1) \text{ m/s}$?
- (a) $a = 4 \text{ m/s}^2$
 - (b) $a = 2 \text{ m/s}^2$
 - (c) $a = 3 \text{ m/s}^2$
 - (d) None of these

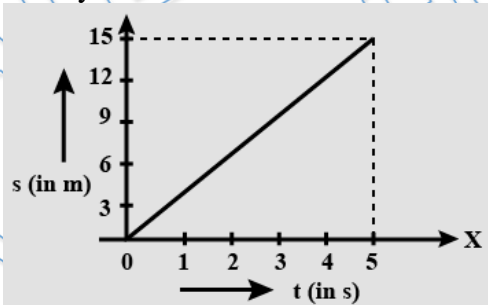


Q 6. The displacement-time graph of a body is shown in figure below. The velocity-time graph of the motion of the body will be:



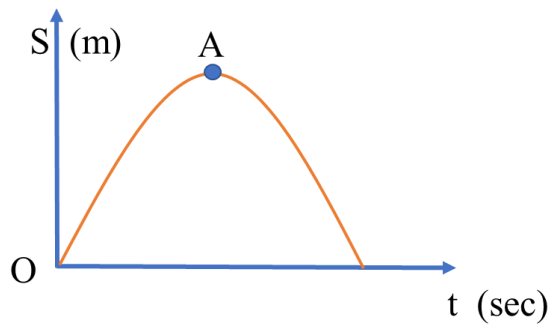
- (a)
- (b)
- (c)
- (d)

Q 7. A displacement-time graph of a body moving with uniform velocity is shown in the figure. Find out its velocity at time $t = 4$ seconds:



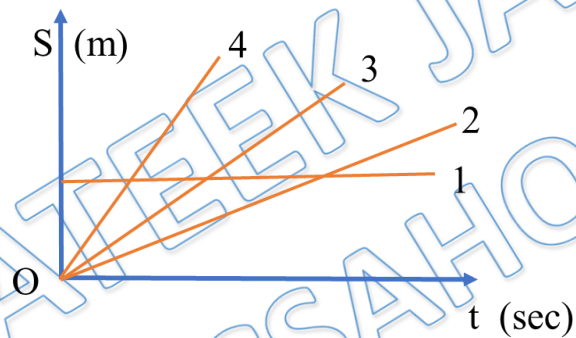
- (a) $v = 4 \text{ m/s}$
 (b) $v = 2 \text{ m/s}$
 (c) $v = 3 \text{ m/s}$
 (d) None of these

Q 8. In Figure as shown below the velocity of the body at topmost point A is:



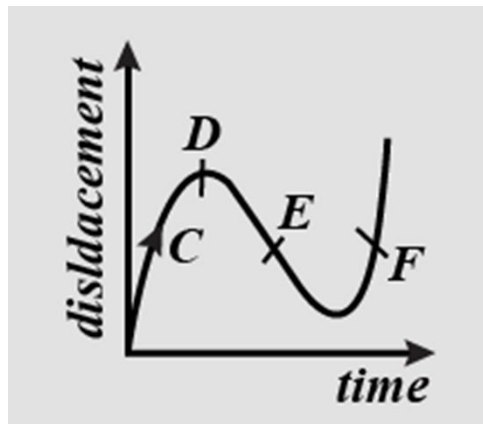
- (a) zero
- (b) 1 m/s
- (c) Infinite
- (d) Maximum

Q 9. The position-time graphs below represent the motions of cars 1 to 4. How do they rank, according to their speeds (greatest first)?



- (a) 1, 2, 3, 4
- (b) 2, 1, 4, 3
- (c) 4, 3, 2, 1
- (d) None of these

Q 10. The displacement-time graph of a moving particle is shown. The instantaneous velocity of the particle is negative at the point :-



- (a) D (b) F
(c) C (d) E

- Q 11. A particle moves along a straight line OX. At a time t (in seconds) the distance x (in meters) of the particle is given by $x = 40 + 12t - t^3$. How much distance will the particle travel before coming to rest?
(a) 24m (b) 56 m
(c) 40m (d) 16m
- Q 12. A particle moves in a straight line with an acceleration $a \text{ ms}^{-2}$ at time ' t ' seconds where $a = -\frac{1}{t^2}$. At time $t = 1$ s the particle has a velocity of 3 ms^{-1} then find the velocity when $t = 4$ s
(a) 1.25 m/s (b) 3.5 m/s
(c) 2.25 m/s (d) 0.5 m/s
- Q 13. Velocity of a particle as function of displacement x is given by $v = b x^{\frac{1}{2}}$. Then the displacement as function of time is
(a) bt (b) $\frac{b^2 t^2}{4}$
(c) $\frac{bt}{4}$ (d) $\frac{b^2 t^3}{4}$
- Q 14. The acceleration of a particle as a function of time t is given as $a = k t^{\frac{5}{2}}$. If initial speed of the particle (at $t = 0$) is u then its velocity v as a function of time t is given as:
(a) $V = u + \frac{2}{5} k t^{\frac{5}{2}}$ (b) $V = u + \frac{2}{7} k t^{\frac{7}{2}}$
(c) $V = u + k t^{\frac{5}{2}}$ (d) $V = u + k t^{\frac{7}{2}}$
- Q 15. For a particle moving along x -axis, acceleration is given as $a = v$. Find the position as a function of time? Given that at $t = 0$, $x = 0$, $v = 1 \text{ m/s}$
(a) $e^t - 1$ (b) $e^{2t} - 1$
(c) $\frac{e^t}{2}$ (d) $e^t + 1$
- Q 16. The acceleration of particle is a function of position is given by $a(x) = 4 - 2x \text{ m/s}^2$. Then velocity $v(x)$ is equal to [given that $v(0) = 0$]
(a) $\sqrt{4x - x^2}$ (b) $\sqrt{2(4x - x^2)}$



(c) $(4x - x^2)$

(d) $2(4x - x^2)$

Answer Key

Q.1 c	Q.2 a	Q.3 a	Q.4 b	Q.5 b
Q.6 d	Q.7 c	Q.8 a	Q.9 c	Q.10 d
Q.11 d	Q.12 c	Q.13 b	Q.14 b	Q.15 a
Q.16 b				

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