

ARJUNA (NEET)

Kinematics

DPP-04

- The displacement y (in meters) of a body varies with time (in seconds) according to the equation $y = -\frac{2}{3}t^2 + 16t + 2$. How long does the body come to rest ?
 (A) 8 seconds (B) 10 seconds
 (C) 12 seconds (D) 14 seconds
- The initial velocity of a particle (at $t = 0$) is u and the acceleration of particle at time t is given by $f = at$, where a is a constant. Which of the following relation for velocity v of particle after time t is true?
 (A) $v = u + at^2$ (B) $v = u + at^2/2$
 (C) $v = u + at$ (D) None of these
- The relation between time t and displacement x is expressed by $x = 2 - 5t + 6t^2$. What will be the initial velocity of the particle ?
 (A) -5 m/sec (B) -3 m/sec
 (C) 6 m/sec (D) 3 m/sec
- Which one of the following equations represent the motion of a body with finite constant acceleration. In these equations y denotes the position of the body at time t and a , b and c are the constant of the motion –
 (A) $y = a/t + bt$
 (B) $y = at$
 (C) $y = at + bt^2$
 (D) $y = at + bt^2 + ct^3$
- The relation between time t and distance x is $t = \alpha x^2 + \beta x$, where α and β are constant. The retardation is –
 (A) $2\alpha v^2$ (B) $2\alpha v^3$
 (C) $2\alpha\beta v^3$ (D) $2\beta^2 v^3$
- The velocity-time relation of an electron starting from rest is given by $u = kt$, where $k = 2$ m/s². The distance traversed in 3 sec is –
 (A) 9 m (B) 16 m
 (C) 27 m (D) 36 m
- The position x of a particle varies with time (t) as $x = at^2 - bt^3$. The acceleration at time t of the particle will be equal to zero, where t is equal to –
 (A) $\frac{2a}{3b}$ (B) $\frac{a}{b}$
 (C) $\frac{a}{3b}$ (D) Zero
- A particle moves along a straight line such that its displacement at any time t is given by $s = t^3 - 6t^2 + 3t + 4$ metres. The velocity when the acceleration is zero is –
 (A) 3 m/s (B) -12 m/s
 (C) 42 m/s (D) -9 m/s
- A car moves along a straight line whose equation of motion is given by $s = 12t + 3t^2 - 2t^3$, where s is in metres and t is in seconds. The velocity of the car at start will be –
 (A) 7 m/s (B) 9 m/s
 (C) 12 m/s (D) 16 m/s
- The velocity of a body depends on time according to the equation $v = 20 + 0.1 t^2$. The body is undergoing-
 (A) uniform acceleration
 (B) uniform retardation
 (C) non-uniform acceleration
 (D) zero acceleration

ANSWERS

1. (C)
2. (B)
3. (A)
4. (C)
5. (B)
6. (A)
7. (C)
8. (D)
9. (C)
10. (C)



Note - If you have any query/issue

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