

ARJUNA (NEET)

Kinematics

DPP-05

PXIMI Pg-58~

1. A particle starts from rest and moves with uniform acceleration. Then the ratio of distance covered in n th second to n second is

(A) $\frac{n^2}{2n-1}$ (B) $\frac{2}{n} - \frac{1}{n^2}$
(C) $\frac{n^2}{n+1}$ (D) $\frac{2n+1}{n^2}$

2. A body A starts from rest with an acceleration a_1 . After 2 s. another body B starts from rest with an acceleration a_2 . If they travel equal distances in the fifth second, after the start of A. then ratio $a_1 : a_2$ is equal to

(A) 5 : 9 (B) 5 : 7
(C) 9 : 5 (D) 9 : 7

3. A body travels a distance x in first two seconds and a distance y in next two seconds. The relation between x and y is

(A) $y = 4x$ (B) $y = x$
(C) $y = 3x$ (D) $y = 2x$

4. The velocity-time relationship is described by equation $v = P + Qt^2$. The body is travelling with

- (A) zero acceleration
(B) uniform acceleration
(C) uniform retardation
(D) non-uniform acceleration

5. A body moving with uniform acceleration 8 ms^{-2} starts from rest. The distance covered by it in fifth second will be

(A) 8 m (B) 64 m
(C) 4 m (D) 36 m

6. A body starts from rest. What is the ratio of the distance travelled by the body during the 4th and 3rd second :

(A) 7/5 (B) 5/7
(C) 7/3 (D) 3/7

7. A body travels for 15 sec starting from rest with constant acceleration. If it travels distance S_1 , S_2 and S_3 in the first five seconds, second five seconds and next five seconds respectively the relation between S_1 , S_2 and S_3 is :

(A) $S_1 = S_2 = S_3$
(B) $5S_1 = 3S_2 = S_3$
(C) $S_1 = \frac{1}{3}S_2 = \frac{1}{5}S_3$
(D) $S_1 = \frac{1}{5}S_2 = \frac{1}{3}S_3$

8. A car moving with a speed of 50 km/hr, can be stopped by brakes after at least 6 m. If the same car is moving at a speed of 100 km/hr. the minimum stopping distance is :

(A) 6 m (B) 12 m
(C) 18 m (D) 24 m

9. A particle experiences a constant acceleration for 20 sec after starting from rest. If it travels a distance S_1 in the first 10 sec and a distance S_2 in the next 10 sec, then :

(A) $S_1 = S_2$ (B) $S_1 = S_2/3$
(C) $S_1 = S_2/2$ (D) $S_1 = S_2/4$

10. Speed of two identical cars are u and $4u$ at a specific instant. The ratio of the respective distances in which the two cars are stopped from that instant is :

(A) 1 : 1 (B) 1 : 4
(C) 1 : 8 (D) 1 : 16

My ans: 56m

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11. A particle moves along a straight line OX. At a time t (in seconds) the distance x (in metres) of the particle from O is given by $x = 40 + 12t - t^3$. How long would the particle travel before coming to rest:-

(A) 24 m (B) 16 m
(C) 56 m (D) 40 m

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12. The displacement of a particle is represented by the following equation : $s = 3t^3 + 7t^2 + 5t + 8$ where s is in metre and t in second. The acceleration of the particle at $t = 1$ is :

(A) 14 m/s^2 (B) 18 m/s^2
(C) 32 m/s^2 (D) Zero

13. A body starts from rest is moving under a constant acceleration up to 20 sec. If it moves S_1 distance in first 10 sec., and S_2 distance in next 10 sec. then S_2 will be equal to

(A) S_1 (B) $2S_1$
(C) $4S_1$ (D) $3S_1$

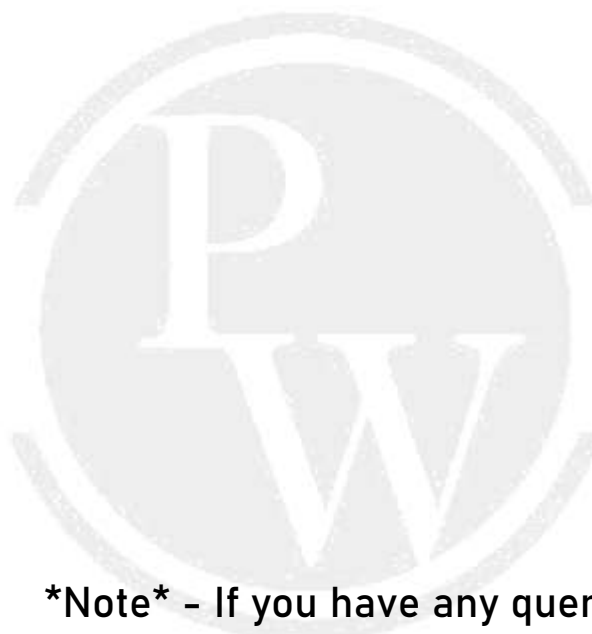
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14. If velocity of object $V = \sqrt{25 - 4x}$ then find acceleration of object.

(A) 4 m/s^2 (B) 2 m/s^2
(C) 5 m/s^2 (D) 8 m/s^2



ANSWERS

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



Note - If you have any query/issue

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