

Yakeen NEET 2.0 2026

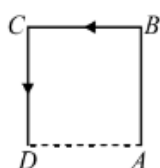
Practice Sheet

Physics by Saleem Sir

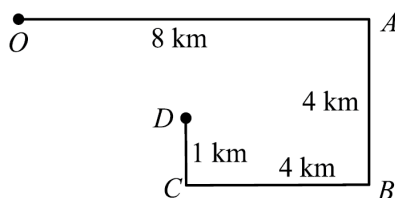
Motion in Straight Line

- Q1** Which of the following statement is not true?
- (A) If displacement covered of a particle is zero, then distance covered may or may not be zero.
- (B) If the distance covered is zero, then the displacement must be zero.
- (C) The numerical value of ratio of displacement to distance is equal to or less than one.
- (D) The numerical value of the ratio of velocity to speed is always less than one.

- Q2** A particle moves along the sides AB, BC, CD of a square of side 25 m with a speed of 15 ms^{-1} . Its average velocity is:



- (A) 15 ms^{-1}
 (B) 10 ms^{-1}
 (C) 7.5 ms^{-1}
 (D) 5 ms^{-1}
- Q3** A car moves from O to D along the path OABCD shown in figure. The distance travelled and net displacement respectively, is:



- (A) 16 km, 1 km
 (B) 17 km, 5 km
 (C) 20 km, 4 km
 (D) 15 km, 3 km

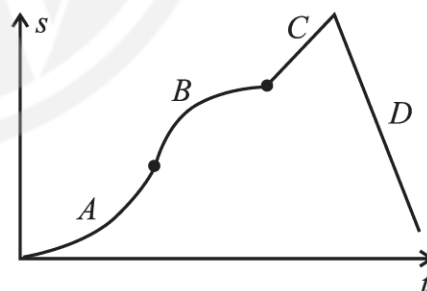
- Q4** The initial velocity of a body having a uniform acceleration of 2 m/sec^2 is 10 m/sec . Its velocity after an interval of 4 sec is

- (A) 12 m/sec
 (B) 14 m/sec
 (C) 16 m/sec
 (D) 18 m/sec

- Q5** The displacement of a body is given by $s = \frac{1}{2}gt^2$, where g is acceleration due to gravity. Then what is velocity of the body at any time t ?

- (A) $\frac{gt^3}{6}$
 (B) $\frac{gt^2}{2}$
 (C) gt
 (D) $\frac{gt}{2}$

- Q6** Displacement time graph of a particle moving in a straight line is shown in the figure below. Then,



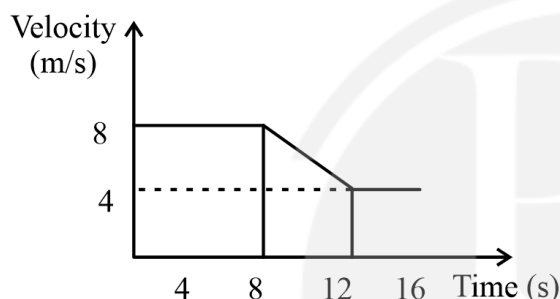
- (A) in region A, acceleration is negative.
 (B) in region B, acceleration is negative.
 (C) in region C, acceleration is non-zero.
 (D) in region D, acceleration is non-zero.
- Q7** An athlete completes one round of a circular track of radius R in 40 s. What will be his displacement at the end of 2 min 20 s?
- (A) 7R
 (B) 2R
 (C) $2\pi R$
 (D) $7\pi R$



- Q8** Object is moving with constant velocity, the speed of object:
 (A) May be variable
 (B) May be constant
 (C) Must be variable
 (D) Must be constant

- Q9** 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

- Q10** Consider the following velocity and time graph:



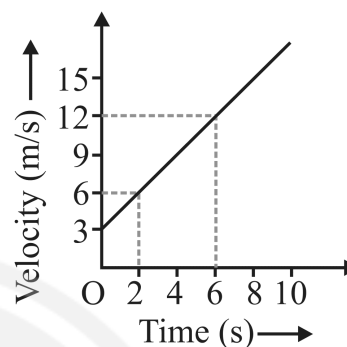
Which one of the following is the value of average acceleration from 8 s to 12 s?

- (A) 8 m/s^2 (B) 12 m/s^2
 (C) 2 m/s^2 (D) -1 m/s^2
- Q11 Assertion (A):** The zero velocity of a particle at any instant always implies zero acceleration at the instant.
Reason (R): A body is momentarily at rest when reverses its direction of motion.
 The correct option among the following is;
 (A) **Assertion** and **Reason** are true, **Reason** is the correct explanation for **Assertion**.
 (B) **Assertion** is true, **Reason** is true but **Reason** is not the correct explanation for **Assertion**.
 (C) **Assertion** is true but **Reason** is false.
 (D) **Assertion** is false but **Reason** is true.
- Q12** A person travelling on a straight line moves with a uniform velocity v_1 for some time and with

uniform velocity v_2 for the next equal time. The average velocity v is given by:

- (A) $v = \frac{v_1 + v_2}{2}$
 (B) $v = \sqrt{v_1 v_2}$
 (C) $\frac{2}{v} = \frac{1}{v_1} + \frac{1}{v_2}$
 (D) $\frac{1}{v} = \frac{1}{v_1} + \frac{1}{v_2}$

- Q13** Calculate the acceleration using the graph shown below.



- (A) 2 m/s^2
 (B) 5 m/s^2
 (C) 3 m/s^2
 (D) 1.5 m/s^2
- Q14** The distance travelled by a particle starting from rest and moving with an acceleration $\frac{4}{3} \text{ m/s}^2$, in the third second is;
 (A) $\frac{10}{3} \text{ m}$ (B) $\frac{19}{3} \text{ m}$
 (C) 6 m (D) 4 m
- Q15** A particle starts moving from rest with uniform acceleration. It travels a distance x in first 2 seconds and distance y in the next 2 seconds. Then;
 (A) $y = 2x$ (B) $y = 3x$
 (C) $y = 4x$ (D) $y = x$
- Q16** Consider that a truck is moving initially with 54 km/h. It has stopped by the driver after looking at an obstacle with a deceleration of 10 m/s^2 . The distance travelled by truck before coming to rest is;
 (A) 12 m (B) 11.25 m
 (C) 11.30 m (D) 11.20 m

Q17



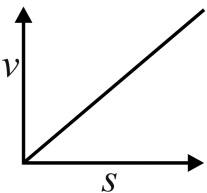
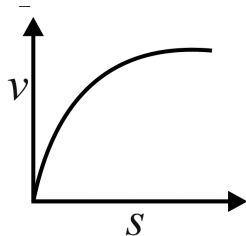
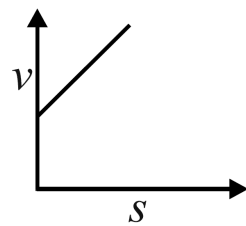
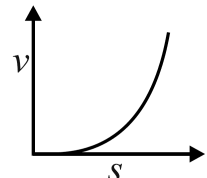
The nature of a graph drawn for a freely falling body with time on the x-axis and speed on the y-axis is (Assuming initial speed to be zero.)

- (A) A straight line with positive y-axis intercept.
- (B) A straight line passing through the origin.
- (C) A parabola.
- (D) A straight line parallel to y-axis with positive x-axis intercept.

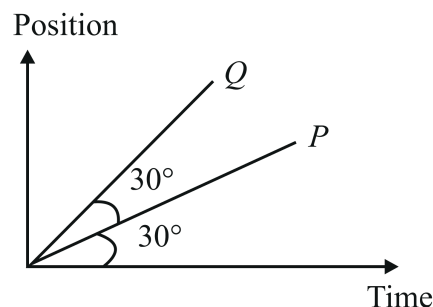
Q18 The time required to stop a car of mass 800 kg, moving at a speed of 20 ms^{-1} over a distance of 25 m is;

- (A) 2 s
- (B) 2.5 s
- (C) 4 s
- (D) 4.5 s

Q19 A particle starts from rest and move with constant acceleration. Its velocity-displacement curve is:

- (A) 
- (B) 
- (C) 
- (D) 

Q20 The position-time graph of two particles P and Q are as shown in figure. The ratio of their velocities $\frac{V_P}{V_Q}$ is



- (A) 1 : 3
- (B) $\sqrt{3} : 1$
- (C) 3 : 1
- (D) $1 : \sqrt{3}$

Q21 A particle moves along a straight line. Its position at any instant is given by $x = 32t - \frac{8t^3}{3}$ where x is in metre and t in second. Find the instant when particle comes to rest and reverses its direction.

- (A) 1 s
- (B) 2 s
- (C) 3 s
- (D) 4 s

Q22 A body dropped from top of a tower fall through 60 m during the last two seconds of its fall. The height of tower is: ($g = 10 \text{ m/s}^2$)

- (A) 95 m
- (B) 60 m
- (C) 80 m
- (D) 90 m

Q23 If the displacement of a particle varies with time as $\sqrt{x} = t + 7$, then-

- (A) Velocity of the particle is inversely proportional to t
- (B) Velocity of the particle is proportional to t^2
- (C) Velocity of the particle is proportional to \sqrt{t}
- (D) The particle moves with constant acceleration.

Q24 A body start from rest and acquires a velocity of 72 km/h in 3 sec. What is the distance travelled by the body during this time interval ?

- (A) 10 m
- (B) 20 m
- (C) 30 m
- (D) 40 m

Q25 A stone thrown upwards with a speed ' u ' from the top of the tower reaches the ground with a



velocity ' $3u$ '. The height of the tower is:

- (A) $\frac{4u^2}{g}$
 (B) $\frac{4u^2}{2g}$
 (C) $\frac{8u^2}{g}$
 (D) $\frac{7u^2}{g}$

Q26 Which of the following four statements is false?

- (A) A body can have zero velocity and still be accelerated.
 (B) A body can have a constant velocity and still have a varying speed.
 (C) A body can have a constant speed and still have a varying velocity.
 (D) The direction of the velocity of a body can change when its acceleration is constant.

Q27 Which of the following is/are correct statements?

I. When a body reaches highest point in vertical motion, its velocity becomes zero but acceleration is non-zero.

II. Average velocity of an object is equal to the instantaneous velocity in uniform motion.

III. Average speed can be zero but average velocity can never be zero.

- (A) I and II
 (B) II and III
 (C) I and III
 (D) I, II and III

Q28 The position of an object moving along X -axis is given by $x = a - bt^2$, where $a = 8.5 \text{ m}$, $b = 2.5 \text{ ms}^{-2}$ and t is measured in second. For the given situation, match the terms in Column I with the values of Column II and choose the correct option from the codes given below:

Column-I		Column-II	
I.	Velocity of object at $t = 2.0 \text{ s}$	P.	-15 ms^{-1}
II.	Velocity of object at $t = 0 \text{ s}$	Q.	-10 ms^{-1}
III.	Instantaneous speed of object at $t = 2.0 \text{ s}$	R.	0 ms^{-1}
IV.	Average velocity between $t = 2.0 \text{ s}$ and $t = 4.0 \text{ s}$	S.	10 ms^{-1}

- (A) I-P II-Q III-R IV-S
 (B) I-Q II-R III-S IV-P
 (C) I-S II-R III-Q IV-P

(D) I-R II-Q III-P IV-S

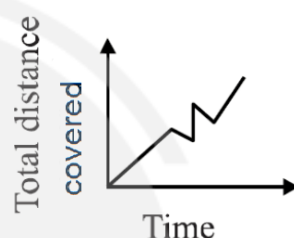
Q29 Assertion: Position-time graph of a stationary object is a straight line parallel to time axis.

Reason: For a stationary object, position does not change with time.

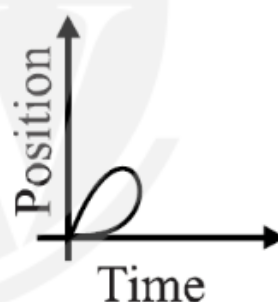
- (A) Assertion is correct, reason is correct; reason is a correct explanation for assertion.
 (B) Assertion is correct, reason is correct; reason is not a correct explanation for assertion
 (C) Assertion is correct, reason is incorrect
 (D) Assertion is incorrect, reason is correct.

Q30 Which of the following graphs cannot possibly represent one-dimensional motion of a particle?

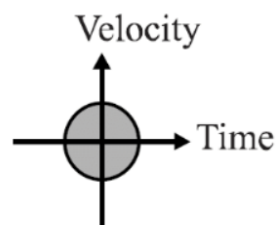
(I)



(II)

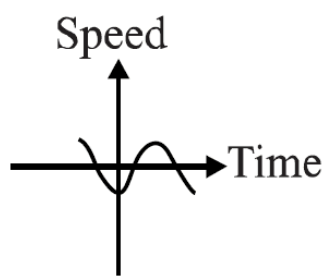


(III)



(IV)



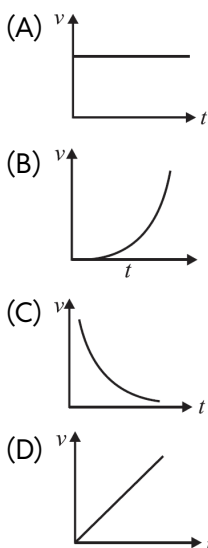


- (A) I and II
(B) II and III
(C) II and IV
(D) All of these

Q31 Initially a body is at rest. If its acceleration is 5 ms^{-2} , then the distance travelled in the 18^{th} second is:

- (A) 86.6 m
(B) 87.5 m
(C) 88.6 m
(D) 89 m

Q32 Which of the following velocity-time graphs represent uniform motion?



Q33 Two particles held at different heights a and b above the ground are allowed to fall from rest. The ratio of their velocities on reaching the ground is:

- (A) $a : b$
(B) $\sqrt{a} : \sqrt{b}$
(C) $a^2 : b^2$
(D) $a^3 : b^3$

Q34 Position of a particle moving along x -axis is given by $x(\text{ in m}) = 2 + 8t - 4t^2$. The distance

travelled by the particle from $t = 0$ to $t = 2 \text{ s}$ is;

- (A) 0 m
(B) 8 m
(C) 12 m
(D) 16 m

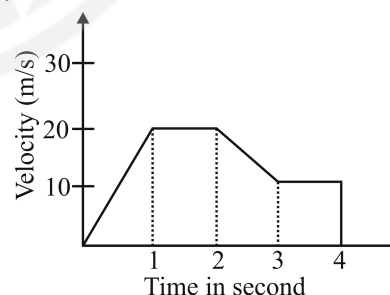
Q35 A particle is thrown vertically upward. Its velocity at half of the maximum height is 10 m/s . The maximum height attained by it is

- (A) 8 m
(B) 20 m
(C) 10 m
(D) 16 m

Q36 In a vacuum, a five-rupee coin, a feather of a sparrow bird and a mango are dropped simultaneously from the same height. The time taken by them to reach the bottom is t_1 , t_2 and t_3 respectively. In this situation, we will observe that;

- (A) $t_1 > t_2 > t_3$
(B) $t_1 > t_3 > t_2$
(C) $t_3 > t_1 > t_2$
(D) $t_1 = t_2 = t_3$

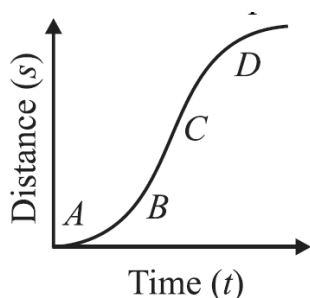
Q37 The variation of velocity of a particle with time moving along a straight line is illustrated in the following figure. The distance travelled by the particle in four seconds is:



- (A) 60 m
(B) 55 m
(C) 25 m
(D) 30 m

Q38 A particle shows distance-time curve as given in this figure. The maximum instantaneous velocity of the particle is around the point





- (A) A (B) B
(C) C (D) D

Q39 A scooter accelerates from rest for time t_1 at constant rate a_1 and then retards at constant rate a_2 for time t_2 and comes to rest. The correct value of $\frac{t_1}{t_2}$ will be:

- (A) $\frac{a_1 + a_2}{a_2}$
(B) $\frac{a_2}{a_1}$
(C) $\frac{a_1}{a_2}$
(D) $\frac{a_1 + a_2}{a_1}$

Q40 Two balls are dropped to the ground from different heights. One ball is dropped 2s after the other but they both strike the ground at the same time. If the first ball takes 5 s to reach the ground. Then the difference in initial heights is ($g = 10 \text{ ms}^{-2}$)

- (A) 20 m (B) 80 m
(C) 170 m (D) 40 m

Q41 Two buses of length 60 feet and 40 feet are moving parallel towards each other at a speed 15 feet/s and 10 feet/s respectively. Time taken to pass each other is;

- (A) $\frac{4}{5} \text{ s}$ (B) 4 s
(C) 8 s (D) 20 s

Q42 A stone falls freely under gravity. It covers distances h_1, h_2 and h_3 in the first 5s, the next 5s and the next 5s respectively. The relation between h_1, h_2 , and h_3 is;

- (A) $h_1 = 2h_2 = 3h_3$
(B) $h_1 = \frac{h_2}{3} = \frac{h_3}{5}$
(C) $h_2 = 3h_1$ and $h_3 = 3h_2$
(D) $h_1 = h_2 = h_3$

Q43 A ball is thrown vertically upwards with a velocity of 25 ms^{-1} from the top of a tower of height 30 m. How long will it travel before it hits ground?

- (A) 6 s (B) 5 s
(C) 4 s (D) 12 s

Q44 A bus starts moving with acceleration 2 m/s^2 . A cyclist 96 m behind the bus starts simultaneously towards the bus at 20 m/s . After what time will he be able to overtake the bus?

- (A) 4 sec (B) 8 sec
(C) 12 sec (D) 16 sec

Q45 From the top of a tower, two stones, whose masses are in the ratio 1:2 are thrown on straight up with an initial speed u and the second straight down with the same speed u (neglect air resistance). Then,

- (A) the heavier stone hits the ground with a higher speed.
(B) the lighter stone hits the ground with a higher speed.
(C) both the stones will have the same speed when they hit the ground.
(D) the speed can't be determined with the given data.



Answer Key

Q1 (D)
Q2 (D)
Q3 (B)
Q4 (D)
Q5 (C)
Q6 (B)
Q7 (B)
Q8 (D)
Q9 (B)
Q10 (D)
Q11 (D)
Q12 (A)
Q13 (D)
Q14 (A)
Q15 (B)
Q16 (B)
Q17 (B)
Q18 (B)
Q19 (B)
Q20 (A)
Q21 (B)
Q22 (C)
Q23 (D)

Q24 (C)
Q25 (A)
Q26 (B)
Q27 (A)
Q28 (B)
Q29 (A)
Q30 (D)
Q31 (B)
Q32 (A)
Q33 (B)
Q34 (B)
Q35 (C)
Q36 (D)
Q37 (B)
Q38 (C)
Q39 (B)
Q40 (B)
Q41 (B)
Q42 (B)
Q43 (A)
Q44 (B)
Q45 (C)



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