

Yakeen NEET 2.0 2026

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DPP: 6

Motion in a straight line

- Q1** If a particle moves with an acceleration, then which of the following can remain constant?
 (A) Both speed and velocity
 (B) Neither speed nor velocity
 (C) Only the velocity
 (D) Only the speed
- Q2** Which of the following statement is **correct** for retardation?
 (A) -ve acceleration is called retardation
 (B) May be +ve and -ve acceleration is called retardation
 (C) Acceleration which is in the direction of motion
 (D) Acceleration which is parallel to the velocity.
- Q3** Which of the following option is correct for magnitude of acceleration
 (A) $\frac{d\vec{V}}{dt}$
 (B) $\frac{d|\vec{V}|}{dt}$
 (C) $\left| \frac{d\vec{V}}{dt} \right|$
 (D) none of these
- Q4** Acceleration of a particle changes when
 (A) Direction of velocity changes
 (B) Magnitude of velocity changes
 (C) Both of above
 (D) Speed changes
- Q5** A car increases its velocity from 15 m/s to 25 m/s in 5 seconds. Find its acceleration (in m/s²) ?
 (A) 5 (B) 4
 (C) 2 (D) 6
- Q6** A car is moving with a velocity of 30 m/s. The driver applied brake for 5 seconds to bring it down to zero. What is the average acceleration?
 (A) -5 m/s^2
 (B) 6 m/s^2
 (C) -6 m/s^2
 (D) Zero
- Q7** An object moves with a constant speed of 20 m/s. What is the displacement after 5 seconds?
 (A) 20 meters (B) 50 meters
 (C) 100 meters (D) 200 meters
- Q8** A car travelling at a speed of 30 km/h is brought to rest in a distance of 8 m by applying brakes. If the same car is moving at a speed of 60 km/h then it can be brought to rest with same brakes in
 (A) 64 m
 (B) 32 m
 (C) 16 m
 (D) 4 m
- Q9** Equation of motion is applicable for
 (A) All type of motion
 (B) Accelerated motion
 (C) Uniformly accelerated motion
 (D) Non-uniform acceleration
- Q10** The ratio of the distance traveled by a freely falling body in the 1st, 2nd, 3rd and 4th second :
 (A) 1 : 1 : 1 : 1 (B) 1 : 2 : 3 : 4



(C) 1 : 4 : 9 : 16 (D) 1 : 3 : 5 : 7

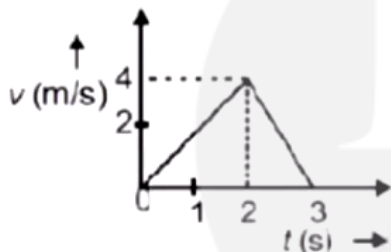
Q11 If velocity of object $V = \sqrt{25 - 4x}$ then find acceleration of object.

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

Q12 A particle moves along a straight line OX . At a time t (in second) the distance x (in metre) of the particle from O is given by $x = 40 + 12t - t^3$. How long would the particle travel before coming to rest?

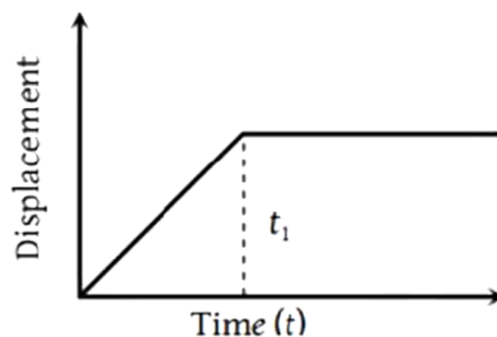
- (A) 24 m
 (B) 16 m
 (C) 56 m
 (D) 40 m

Q13 The velocity versus time graph of a body moving in a straight line is as shown in the figure below



- (A) The distance covered by the body in 0 to 2 s is 8 m
 (B) The acceleration of the body in 0 to 2 s is 4 ms^{-2}
 (C) The acceleration of the body in 2 to 3 s is 4 ms^{-2}
 (D) The distance moved by the body during 0 to 3 s is 6 m

Q14 The $x - t$ graph shown in figure represents



- (A) Constant velocity
 (B) Velocity of the body is continuously changing
 (C) Instantaneous velocity
 (D) The body travels with constant speed upto time t_1 and then stops



Answer Key

Q1 (D)

Q2 (B)

Q3 (C)

Q4 (C)

Q5 (C)

Q6 (C)

Q7 (C)

Q8 (B)

Q9 (C)

Q10 (D)

Q11 (B)

Q12 (B)

Q13 (D)

Q14 (D)



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