

**CLASS-IX PHYSICS**  
**MOTION**

**Assignment-3**

**MULTIPLE CHOICE QUESTION 3.1**

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1. A car accelerated uniformly from 18 km/h to 36 km/h in 5 s. The accelerating is  $\text{ms}^{-2}$  is :  
(A) 1                      (B) 2                      (C) 3                      (D) 4
2. Out of energy and acceleration which is vector ?  
(A) Acceleration        (B) Energy                (C) Both                    (D) None of these
3. C.G.S. unit of acceleration is :  
(A)  $\text{ms}^{-2}$                 (B)  $\text{cm s}^{-2}$                 (C)  $\text{ms}^2$                     (D)  $\text{cm s}^2$
4. A train starting from a railway station and moving with inform acceleration, attains a speed of  $40 \text{ kmh}^{-1}$  in 10 minutes, Is acceleration is :  
(A)  $18.5 \text{ ms}^{-2}$         (B)  $1.85 \text{ cm s}^{-2}$         (C)  $18.5 \text{ cms}^{-2}$         (D)  $1.85 \text{ m s}^{-2}$
5. The brakes applied to a cap produce a negative acceleration of  $6\text{ms}^{-2}$ . If the car stops after 2 seconds, the initial velocity of the car is :  
(A)  $6 \text{ ms}^{-1}$             (B)  $12 \text{ ms}^{-1}$             (C)  $24 \text{ ms}^{-1}$             (D) zero
6. A body is moving with uniform velocity of  $10 \text{ ms}^{-1}$ . The velocity of the body after 10 s is :  
(A)  $100 \text{ ms}^{-1}$         (B)  $50 \text{ ms}^{-1}$             (C)  $10 \text{ ms}^{-1}$             (D)  $5 \text{ ms}^{-1}$
7. In 12 minutes a car whose speed is  $35 \text{ kmh}^{-1}$  travels of distance of :  
(A) 7 km                    (B) 3.5 km                (C) 14 km                (D) 28 km
8. A body is moving along a straight line at  $20 \text{ ms}^{-1}$  undergoes an acceleration of  $4 \text{ ms}^{-2}$ . After 2 s, its speed will be:  
(A)  $8 \text{ ms}^{-2}$                 (B)  $12 \text{ ms}^{-1}$                 (C)  $16 \text{ ms}^{-2}$                 (D)  $28 \text{ ms}^{-2}$
9. A car increase its speed from  $20 \text{ kmh}^{-1}$  to  $50 \text{ kmh}^{-1}$  is 10 sec., its acceleration is :  
(A)  $30 \text{ ms}^{-1}$                 (B)  $3 \text{ ms}^{-1}$                 (C)  $18 \text{ ms}^{-1}$                 (D)  $0.83 \text{ ms}^{-1}$
10. When the distance travelled by an object is directly proportional to the time, it is said to travel with :  
(A) zero velocity        (B) constant speed        (C) constant acceleration        (D) uniform velocity
11. A body freely failing from rest has a velocity V after it falls through a height h. The distance it has to fall further for its velocity to be come double is :  
(A) 3 h                      (B) 6 h                      (C) 8 h                      (D) 10 h
12. The velocity of bullet is reduced from  $200\text{m/s}$  to  $100 \text{ m/s}$  while traveling through a wooden block of thickness 10 cm. The retardation, assuming it to be uniform will be :  
(A)  $10 \times 10^4 \text{ m/s}^2$         (B)  $1.2 \times 10^4 \text{ m/s}^2$         (C)  $13.5 \times 10^4 \text{ m/s}^2$         (D)  $15 \times 10^4 \text{ m/s}^2$

13. A body starts falling from height 'h' and travels distance  $h/2$  during the last second of motion. The find of travel (in sec.) is :
- (A)  $\sqrt{2} - 1$                       (B)  $2 + \sqrt{2}$                       (C)  $\sqrt{2} + \sqrt{3}$                       (D)  $\sqrt{3} + 2$

### SUBJECTIVE QUESTION - 3.2

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1. Find the formula for the distance covered by a body in  $n^{\text{th}}$  s.
2. How is the position of a moving particle along a straight line described by a number ? How is the direction of motion specified by the number describing position ?
3. A ball is thrown vertically upward from the ground with a velocity  $39.2 \text{ ms}^{-1}$ . Calculate :
  - (i) the maximum height to which the ball rises and
  - (ii) the time taken by the ball to reach the highest point.
4. A body standing near the edge of a cliff  $125 \text{ m}$  above a river throws a stone downward with a speed of  $10 \text{ ms}^{-1}$ . Find :
  - (i) with what speed will the stone hit water and
  - (ii) how long will it take to descend ?
5. A stone is dropped from the top of a building  $200 \text{ m}$  high and at the same time another stone is projected vertically upward from the ground with a velocity of  $50 \text{ ms}^{-1}$ . Find where and when the two stone will meet.
6. A ball thrown vertically upward reached a height of  $80 \text{ m}$ . Calculate :
  - (i) the time to reach the highest point
  - (ii) the speed of the ball upon arrival on the ground.