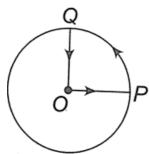


Hasnat Physics Classes Kamaal Lane, Jail Road, Muzaffarpur

PrSh -01-ONE DIMENSIONAL MOTION-L-1

| 1. | Displacement is a | | |
|----|---|--|--|
| | a) tensor | b) Hector | |
| | c) scalar | d) Vector | |
| 2. | For one-dimensional motion displacement is the change in position and is given by | | |
| | a) $\Delta { m x}={ m x}_2-{ m x}_1$ | b) $\Delta \mathrm{x}=\left(\mathrm{x}_{2}+\mathrm{x}_{1} ight)/2$ | |
| | c) $\Delta \mathrm{x} = \mathrm{x}_2 + \mathrm{x}_1$ | d) $\Delta x = 2(x_2+x_1)$ | |
| 3. | Path length is defined as | | |
| | a) distance from origin to origin. | b) the total length of the path traversed by an object. | |
| | c) the distance from origin to maximum point. | d) the distance from origin to minimum point. | |
| 4. | A golf ball is released from rest from the top of a very tall building. Calculate the position in m of the ball after | | |
| | $2.00 \text{ seconds.}(g=9.8\text{m/s}^2)$ | | |
| | a) 32.1 | b) 20.9 | |
| | c) 19.6 | d) 22.2 | |
| 5. | If the distance covered is zero, the displacement | | |
| | a) may or may not be zero | b) cannot be zero | |
| | c) must be zero | d) depends upon the particle | |
| 6. | A cyclist moves in such a way that he takes 60° turn seventh turn? | after 100 m. What is the displacement when he takes the | |
| | a) $100\sqrt{3}$ m | b) 100 m | |
| | c) 200 m | d) $\frac{100}{\sqrt{3}}$ m | |
| 7. | A cyclist starts from the centre O of a circular park of radius one kilometre, reaches the edge P of the park. Then | | |
| | cycles along the circumference and returns to the centre along QO as shown in the figure. If the round trip takes | | |

ten minutes, the net displacement and average speed of the cyclist (in metre and kilometre per hour respectively)



a) 0, 1

b) $\frac{\pi+4}{2}$, 0

c) 21.4, $\frac{\pi+4}{2}$

- d) 0, 21.4
- 8. A toy cyclist completes one round of a square 2 m in 40 seconds. What will be the displacement at the end of 3 minutes?
 - a) 16 m

b) Zero

c) 52 m

d) $2\sqrt{2}$ m

- 9. Which of the following is correct?
 - i. Displacement is always equal to the distance.
 - ii. Displacement must be in the direction of the acceleration of the body.
 - iii. Displacement must not be in the direction of velocity.
 - iv. None of these
 - a) Only (ii)

b) Only (i)

c) Only (iv)

- d) Only (iii)
- 10. The magnitude of the displacement is equal to the distance covered in a given interval of time if the particle
 - a) moves with constant speed

- b) moves with constant acceleration
- c) moves with different velocity
- d) moves with constant velocity
- 11. A body starts from rest and travels with constant acceleration . What is the ratio of the distance covered by the body during the 4^{th} and 3^{rd} second.
 - a) $\frac{3}{7}$

b) $\frac{7}{3}$

c) $\frac{7}{5}$

d) $\frac{5}{7}$

- 12. In Kinematics we study ways to
 - a) describe motion without going into the causes of motion.
- b) find jerk without going into the causes of motion.
- c) find acceleration without going into the causes of motion.
- d) find velocity without going into the causes of motion.
- 13. A 100 m long train is moving with a uniform velocity of 45 km/h. The time taken by the train to cross a bridge of length 1 km is:
 - a) 78 s

b) 58 s

c) 68 s

- d) 88 s
- 14. A truck on a straight road starts from rest, accelerating at 2.00 m/s² until it reaches a speed of 20.0 m/s. Then the

| | an additional 5.00 s. What is the average velocity in m/s of the truck for the motion described? | | |
|-----|---|--|--|
| | a) 15.7 | b) 17.5 | |
| | c) 154 | d) 16.2 | |
| 15. | A stone dropped from the top of | f the tower touches the ground in 2 sec. The height of the tower is about: | |
| | $(g=10 \text{m/s}^2)$ | | |
| | a) 40 m | b) 25 m | |
| | c) 160 m | d) 20 m | |
| 16. | 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) $\frac{a_2}{a_1}$ | b) $\frac{a_1 + a_2}{a_1}$ | |
| | C) $\frac{a_1+a_2}{a_2}$ | d) $\frac{a_1}{a_2}$ | |
| 17. | An athlete completes one round | of a circular track of radius R in 40 seconds. What will be his displacement at | |
| | the end of 2 minutes 20 seconds | ?? | |
| | a) $7\pi R$ | b) 2πR | |
| | c) Zero | d) 2R | |
| 18. | A ball is dropped on the floor from a height of 10 m. It rebounds to a height of 2.5 m. If the ball is in contact | | |
| | with the floor for 0.01 sec, the a | verage acceleration during contact is: | |
| | a) $1400 \frac{m}{\sec^2}$ | b) $2100 \frac{m}{\sec^2}$ upwards | |
| | c) $700 \frac{m}{\sec^2}$ | b) $2100 \frac{m}{\sec^2}$ upwards d) $2100 \frac{m}{\sec^2}$ downwards | |
| 19. | The change in position or displacement (Δx) divided by the time intervals (Δt), in which the displacement | | |
| | occurs is known as | | |
| | a) acceleration | b) average acceleration | |
| | c) speed | d) average velocity | |
| 20. | Instantaneous velocity or simply velocity v at an instant t equals | | |
| | a) $\lim_{t	o\infty}rac{\Delta x}{\Delta t}$ | b) $\lim_{\Delta t 	o 0} rac{\Delta x}{\Delta t}$ | |
| | c) $\lim_{	ext{t}	o 0}rac{\Delta x}{2\Delta t}$ | d) $\lim_{	au	o 1}rac{\Delta x}{\Delta t}$ | |
| | | | |
| | | | |

truck travels for 20.0 s at a constant speed until the brakes are applied, stopping the truck in a uniform manner in