

Study Time Educators

NEET - Basic Questions

Syllabus: NCERT

Subject: Physics

Topic: Motion in One Dimension

Place: Sivakasi

d. Zero

1. A particle is rotating in a circle of radius r. The distance travelled by it in completing half circle would be

a. r b. πr c. 2πr

2. A stone falls freely from rest and the total distance covered by it in the last second of its motion equals the distance covered by it in the first three second of its motion. The stone remains in air for

a. 6s b. 5s c. 7s d. 4s

3. A body covers 16, 18, 20, 22 meters in 5th, 6th, 7th and 8th seconds respectively. Which of the following statements is true about the body?

a. The body moves with a uniform velocity from rest.

b. The body from rest moves with uniform acceleration

c. The body moves with an initial velocity and moves with uniform acceleration

d. The body moves with an initial velocity and then moves with uniform velocity

4. What can be said about the displacement of the body it covers a distance of zero?

a. It is zero

b. It cannot be zero

c. It may or may not be zero d. It is negative

5. Which of the following remains constant if a body travels with constant acceleration?

a. Time b. Velocity c. Displacement d. None of the above

6. A body is thrown vertically upward in air when air resistance is taken into account, the time of ascent is t_1 and time of descent is t_2 then which of the following is true?

a. †1 = †2	b. †1< †2	c. †₁ > †₂	d. $t_1 \ge t_2$

7. A body sitting on the top most berth in the compartment of a train which is just go to stop on a railway station, drops an apple aiming at the open hand of his brother situated vertically below his hands at a distance of about 2m. The apple will fall

a. Precisely in the hand of his brother

b. Slightly away from the hand of his brother in the direction of motion of the train

c. Slightly away from the hand of his brother in the direction opposite to the direction of motion of the train

d. None of the above

8. A graph is drawn between velocity and time for the motion of a particle. The area under the curve between the time intervals t_1 and t_2 gives

- a. momentum of the particle b. displacement of the particle
- d. change in velocity of the particle c. Acceleration of the particle
- e. Force on the particle
- 9. The numerical ratio of displacement to the distance covered is always
- a. less than one b. equal to one
- c. equal to or less than one d. equal to or greater than one
- 10. What determines the nature of the path followed by the particle
- d. both b and c a. speed b. velocity c. acceleration

11. If a particle moves with acceleration, then which of the following can remain constant

b. Neither speed nor velocity a. both speed and velocity c. only the velocity

d. only the speed

12. The displacement x of a particle varies with time t, $x = ae^{-\alpha t} + be^{\beta t}$, where $a, b, \alpha \& \beta$ are positive constants. The velocity of the particle will

a. Go on decreasing with time	b. Be independent of $\alpha \& \beta$
c. Drop to zero when $\alpha = \beta$	d. Go on increasing with time

13. A ball is hung by a string from the ceiling of a car moving on a straight and smooth road. If the string is inclined towards the front side of the car making a small constant angle with the vertical, then the car is moving with

a. constant velocity b. constant acceleration

c. constant retardation d. increasing acceleration

e. decreasing retardation

14. The path of a particle moving under the influence of a force fixed in magnitude and direction is

d. ellipse

a. straight line b. circle c. parabola

15. For a moving body at any instant of time.

a. If the body is not moving, the acceleration is necessarily zero

b. If the body is slowing, the retardation is negative

c. If the body is slowing, the distance is negative

d. If the displacement, velocity and acceleration at that instant are known, we can find the displacement at any given time in future.

16. Select the incorrect statements from the following

S1: Average velocity is path length divided by time interval

S2: In general, speed is greater than the magnitude of the velocity

S3: A particle moving in a given direction with a non-zero velocity can have zero speed

S4: The magnitude of average velocity is the average speed

a. 52 and 53	b. 51 and 54
c. S1, S3 and S4	d. All four statements

17. A train is moving towards east and a car is along north, both with same speed. The observed direction of car to the passenger in the train is

a. East-North direction	b. West-North direction
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c. South-East direction

d. None of these

18. Two identical metal spheres are released from the top of a tower after t seconds of each other such that they fall along the same vertical line. If air resistance is neglected, then at any instant of time during their fall.

- a. The difference in their displacement remains the same
- b. The difference between their speeds remain the same
- c. The difference between their heights above ground is proportional to t²
- d. The difference between their displacement is proportional to t.

19. A bomb is dropped by a fighter plane flying horizontally. To an observer sitting in the plane, the trajectory of the bomb is a

- a. Hyperbola
- b. Straight line vertically down the plane
- c. Parabola in a direction opposite to the motion of a plane
- d. Parabola in the direction of motion of plane

20. An object is thrown vertically upwards. At its maximum height, which of the following quantity becomes zero

a. Momentum

b. Potential Energy

c. Acceleration

d. Force

