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Class 9

SCIENCE

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Motion
Daily Practice Problems

Question 1:

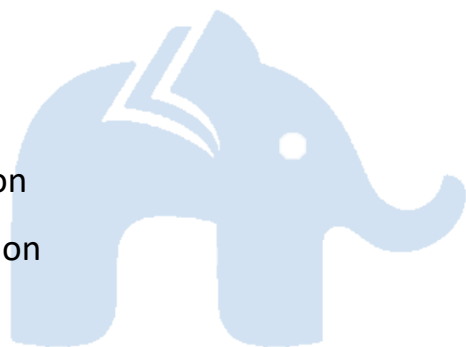
Suppose a boy is enjoying a ride on a merry-go-round which is moving with a constant speed of 10 m/s. what does it implies with respect to boy?

- (a) at rest
- (b) moving with no acceleration
- (c) in accelerated motion
- (d) moving with uniform velocity

Question 2:

If the displacement of an object is proportional to square of time, then the object moves with

- (a) uniform velocity
- (b) uniform acceleration
- (c) increasing acceleration
- (d) decreasing acceleration



Question 3:

A body is thrown vertically upward with velocity u , the greatest height h to which it will rise is,

- (a) u/g
- (b) $u^2/2g$
- (c) u^2/g
- (d) $u/2g$

Question 4:

In which of the following cases of motions, the distance moved and the magnitude of displacement are equal?

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- (a) If the car is moving on straight road
- (b) If the car is moving in circular path
- (c) The pendulum is moving to and fro
- (d) The earth is revolving around the Sun

Question 5:

The maximum speed of a train is 80 km/h. It takes 10 h to cover a distance of 400 km. Find the ratio of its maximum speed to its average speed.

Question 6:

Starting from a stationary position, Rahul paddles his bicycle to attain a velocity of 6 m s^{-1} in 30 s. Then he applies brakes such that the velocity of the bicycle comes down to 4 m s^{-1} in the next 5 s. Calculate the acceleration of the bicycle in both the cases.

Question 7:

The brakes applied to a car produce an acceleration of 6 m s^{-2} in the opposite direction to the motion. If the car takes 2 s to stop after the application of brakes, calculate the distance it travels during this time.

Question 8:

What are inertial and non-inertial frames of reference?

Question 9:

Write some uses of velocity- time graph?

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Question 10:

A stone is thrown in a vertically upward direction with a velocity of 5 m s^{-1} . If the acceleration of the stone during its motion is 10 m s^{-2} in the downward direction, what will be the height attained by the stone and how much time will it take to reach there?

Question 11:

Give an example of a body which may appear to be moving for one person and stationary for the other.

Question 12:

What can you say about the motion of an object if its speedtime graph is a straight line parallel to the time axis?

Question 13:

A body starting from rest has an acceleration of 4 m/s^2 . Calculate distance travelled by it in 5th second.

Question 14:

Differentiate between distance and displacement?

Question 15:

Derive 1st equation of motion graphically?

Question 16:

Derive 2nd equation of motion graphically?

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Question 17:

Derive 3rd equation of motion graphically?

Question 18:

What is the nature of the distance-time graphs for uniform and non-uniform motion of an object?

Question 19:

A racing car has a uniform acceleration of 4 m s^{-2} . What distance will it cover in 10 s after start?

Question 20:

How can we describe the location of the object?

