STD VI

MOTION

Q1. When is a body said to be in motion in relation to an observer?

A1. A body is said to be in motion, in realtion to an observer, when the distance between them changes with respect to time.

Eg. A passenger in a moving train finds a line of trees to be moving.

Q2. Suppose you are running down a street. Are the houses at rest or in motion , relative to you?

A2. The houses around the street will be in motion,in relation to me, because the distance between me and the houses changes with respect to time.

Q3. What is rectilinear motion?

A3. When a body moves in the straight line ,it is said to be showing rectilinear motion.

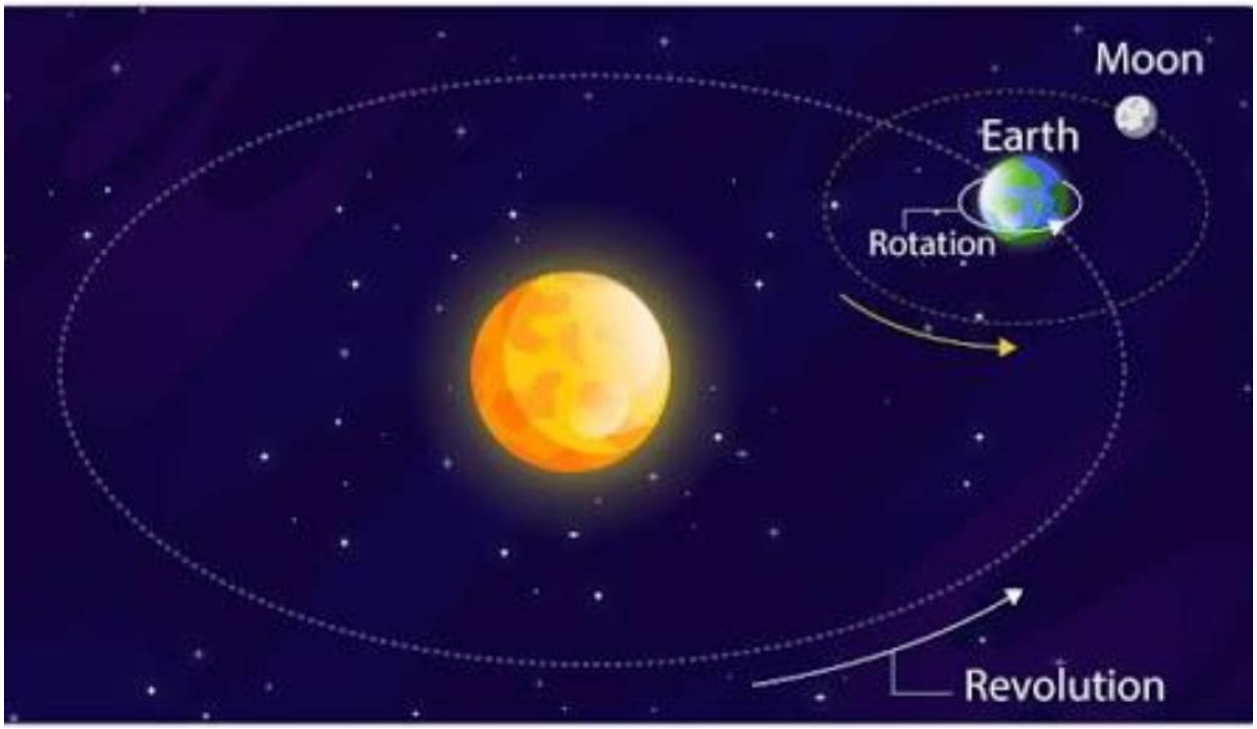
Q4. What happens when you throw tennis ball up in the air?

A4. When we throw a tennis ball straight up in the air, it shows rectilinear motion.

Q5. Quite often a body shows two type of motion at the same time. Give an example of this.

A5. The rotation and revolution of the earth.

It shows both rotational as well as circular motion.



Q6. Is it possible for a body to appear to be at rest to one observer and in motion to another at the same time ? Explain with the help of an example.

A6. Yes , it is possible.

For example, if two people are sitting in a moving bus , they are at rest for each other(distance does not change between them) but for person outside the bus, they are in motion (distance is changing with time).

Q7. What is the difference between rotational motion and circular motion? Explain with examples.

A7. Rotational Motion : Any object which rotates on its axis ,is said to be in rotational motion.

For eg. - rotation of the earth ,hands of the clock or rotationof a fan.

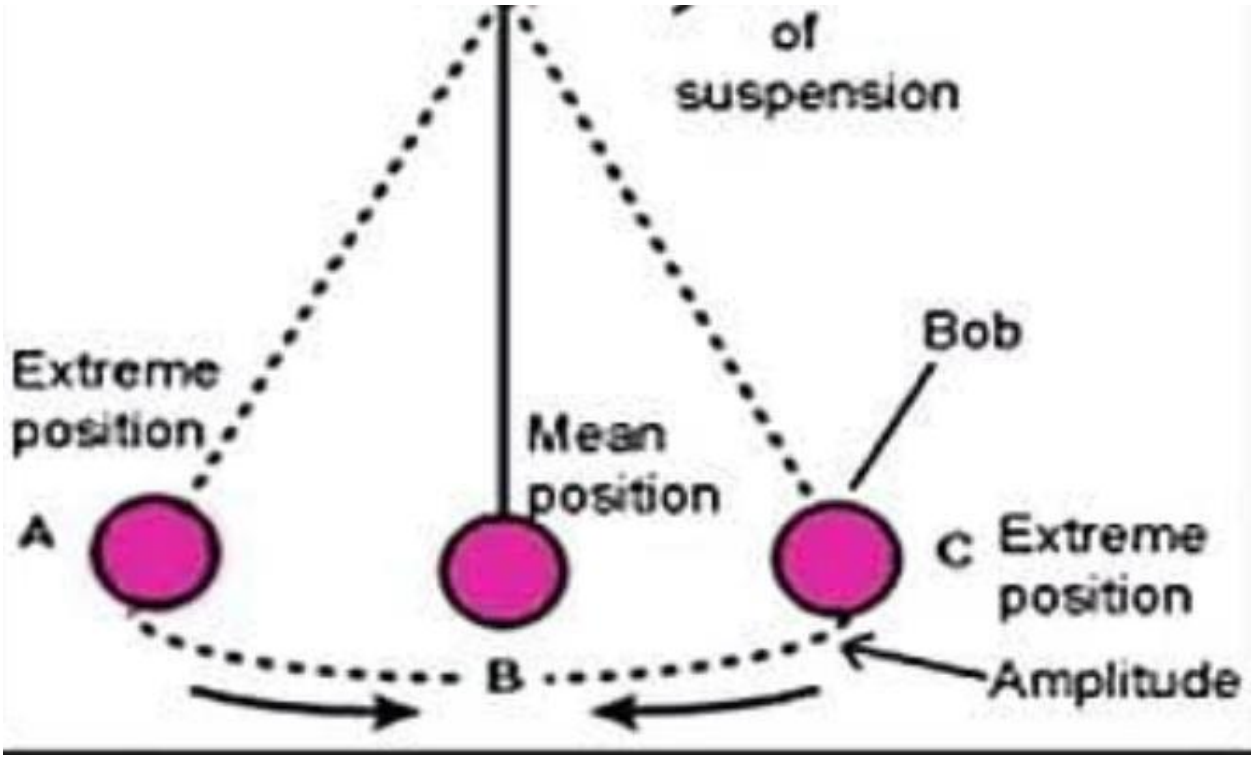
Circular Motion : Any object ,which follows a circular path ,is said to be in a circular motion.
For eg. - Revolution of the earth around the sun, a toy train on a circular track.

Q8. Explain oscillatory motion ? Is it always periodic?

A8. The to-and-fro motion that a body repeats about its position of rest after a fixed interval of time is known as oscillatory motion.

For eg. The motion of a pendulum or the movement of a swing.

*Under ideal conditions it is periodic.



Q9. Can any other motion be periodic ? Give an example to justify the answer.

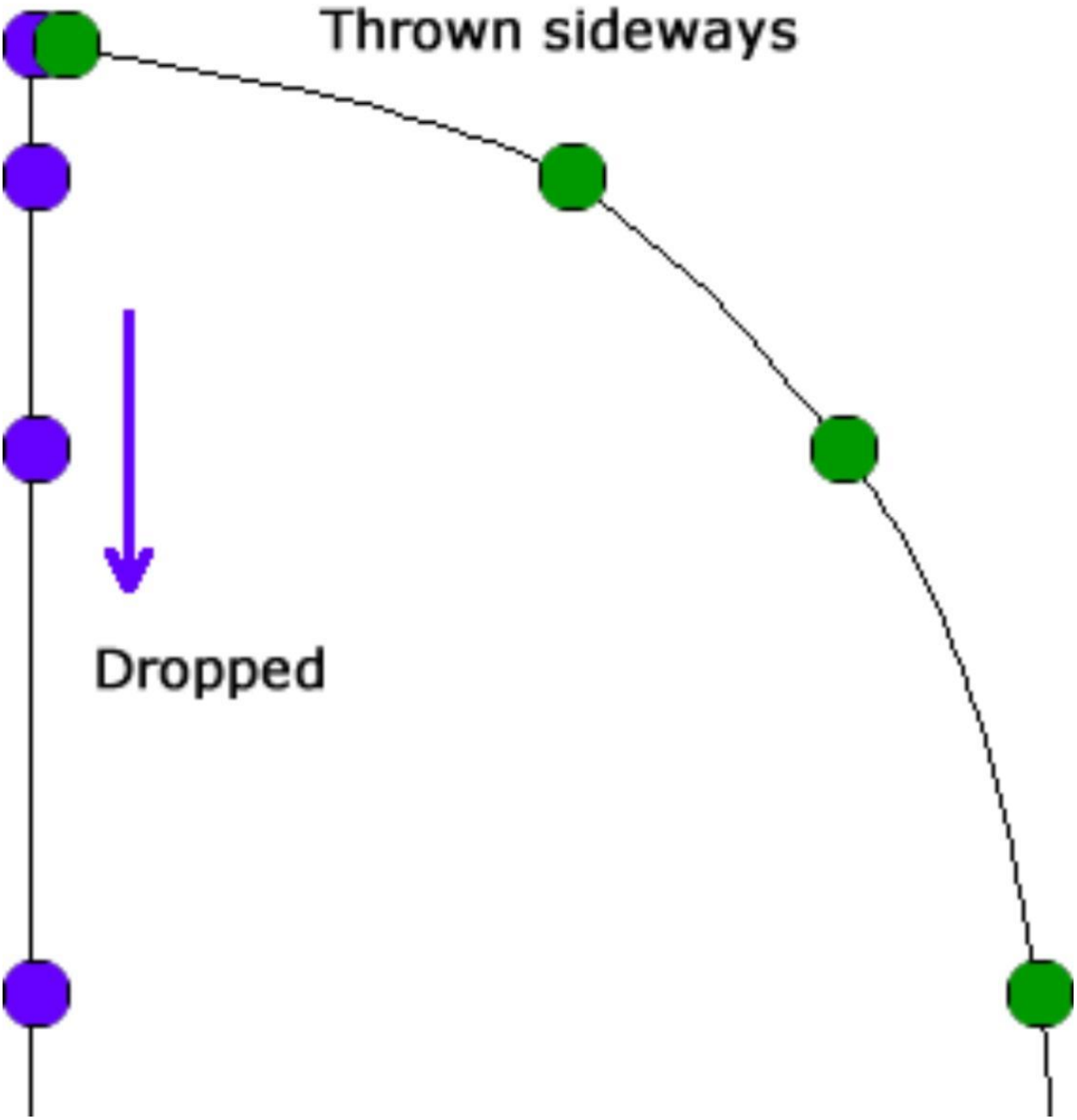
A9. Any motion can be periodic ,if it repeats itself in a fixed interval of time. For eg. The rotation of earth about its axis or revolution of the earth around the sun takes place at a fixed interval of time, which is periodic.

*The rotation of fan at a fixed speed is also periodic.

Q10. Differentiate between curvilinear and rectilinear motion.

Curvilinear motion- When a body moves along a curved path,its motion is called curvilinear motion while when it moves in a straight line, it's motion is called as rectilinear motion.

* For eg. A ball dropped from a height shows rectilinear motion while a ball thrown from the roof shows curvilinear motion.



Q11. A body moves 1 metre along a circular track every 1 second. Which kind of motion is shown by the body?

A11. The body shows circular motion. It also shows periodic motion as the movement of the body occurs in a fixed interval of time.

Do it yourself:

Q1. You are riding a bicycle on a circular road. Which type/types of motion is shown by -

Your bicycle on the road.

The tires of the your bicycle

Q2. Name the type/types of motion shown by the following objects-

1. The blades of a flying helicopter.

2. The movement of a screw driver.

3. A stone dropped from a roof.