

Motion

1. What is Rest?

Ans. An object is said to be Rest if it does not change its position with time and with respect to its immediate surroundings.

2. What is Motion?

Ans. An object is said to be in motion if it changes its position with time and with respect to its immediate surroundings.

3. "Rest and Motion are relative terms"- Explain.

Ans. Rest and motion are the relative terms because they depend on the observer's frame of reference. So, if two different observers are not at rest with respect to each other, then they too get different results when they observe the motion or rest of a body.

4. What is Translatory Motion?

Ans. The motion of an object in which every point of the object moves through the same distance in the same interval of time is called Translatory Motion.

5. What is Rectilinear Motion?

Ans. The motion of an object along a straight line is called rectilinear motion. It is also called Linear Motion.

6. What is Curvilinear Motion?

Ans. The motion of an object along a curved line is called Curvilinear Motion.
Ex: A car taking a turn on a road.

7. What is Circulatory Motion?

Ans. The motion of an object about a fixed point along the circumference of a circle, without changing its position is called circulatory motion. It is also called Rotatory Motion.
Ex: The Earth spinning on its axis.

8. What is Oscillatory Motion?

Ans. The motion of an object in which the object moves to and fro or back and forth its mean position is called Oscillatory Motion.
Ex: The motion of a pendulum.

9. What is Vibratory Motion?

Ans. The motion of an object in which a part of an object moves to and fro or back and forth in a fixed pattern about its mean position, while the rest of the object always remains fixed is called Vibratory Motion.
Ex: When the string of a sitar is plucked, it starts moving up and down whereas the sitar remains stationary.

10. What is Periodic Motion?

Ans. The motion which repeats itself at fixed intervals of time is called periodic Motion.
Example: Pendulum, The motion of the Earth about its axis.

11. What is Simple Pendulum?

Ans. An arrangement that consists of a small heavy mass which is suspended by a weightless, inextensible and perfectly flexible string from a rigid support is called a simple pendulum. This heavy mass is called a bob.

12. What is One Oscillation?

Ans. One complete to and fro motion of the pendulum about its mean position is called One Oscillation.

13. What is Time Period?

Ans. The time taken by the pendulum to complete one oscillation is called its Time Period.

It is denoted by T.

And Its SI unit is Second(s).

14. What is Non-Periodic Motion?

Ans. The motion which does not repeat itself at fixed intervals of time is called Non-Periodic Motion.

Example: The swinging of our arms or legs.

15. What is Multiple Motion?

Ans. The motion which consists of two or more type of motions is called Multiple Motion.

It is called Complex Motion.

Example: While travelling in a train, the motion is linear motion, at the same time the hands of the wrist watch possess the rotational motion.

16. What is Random Motion?

Ans. The motion in which an object changes its direction frequently is called Random Motion. It is also called Zig-zag motion or Irregular Motion.

Ex: The motion of a flying mosquito.

17. What is Distance? What is its unit?

Ans. Distance is the total movement of an object without any regard to direction. SI unit of Distance is Metre (m).

18. What is Speed?

Ans. The distance travelled by an object per unit time is known as Speed of the object.

Speed: Distance travelled/ Time Taken.

SI unit= meter per second

19. What is Uniform Motion?

Ans. An object is said to be in uniform motion if, while moving along a straight line, it covers equal distances in equal intervals of time.

20. What is Non-Uniform Motion?

Ans. An object is said to be non-uniform motion if while moving along a straight line, it covers unequal distances in equal intervals of time.

21. What is Uniform Speed?

Ans. When an object covers equal distances in equal intervals of time, then the object is said to be moving with uniform speed or constant speed.

22. What is Non-Uniform Speed?

Ans. When an object covers unequal distances in equal intervals of time, then the object is said to be moving with a non-uniform speed or variable speed.

23. What is Average Speed?

Ans. Average speed is calculated by dividing the total distance that something has travelled by the total amount of time it took it to travel that distance.

Average Speed= Total Distance travelled/ Total Time taken

24. What is Weight?

Ans. The weight of a body is the force with which the Earth attracts it to its centre. It depends upon the gravitational force acting on the body.

Sourav Kumar Biswas 8697176834