

## PHYSICS (IX) 2020-2021

**1). PHYSICS:-** The study of laws of nature is the objective of physics. Physics can be described completely in the language of maths. The advance form of physics is called engineering.

**2). PHYSICAL QUANTITIES:-** Those Quantities which are used to express the laws of nature or the rules of physics are called physical quantities.

Eg:- time, distance, displacement, speed, velocity, work etc.

There are two types of physical quantity:

(1) Scalar (2) vector

**3). SCALARS:-** Those physical quantities which have magnitude only are called scalars.

Eg:- time, distance, speed, work, power, energy, pressure, etc.

**4). VECTORS:-** Those physical quantities which having magnitude as well as a proper direction are called vectors. E.g.:- displacement, velocity, acceleration, force, linear momentum, electric field etc.

## CHAPTER-8 (MOTION)

**1). REST:-** When an object does not change its position with respect to

Time, then it is said to be at rest.

**2). MOTION:-** If an object changes its position with respect to time, then it is said to be in motion.

**3). REFERENCE POINT:-** Reference point is supposed to be a fixed point or the constant point with respect to which we can represent other points. The origin of co-ordinate geometry is supposed to be the reference point.

**4). POSITION OF THE PARTICLE:-** The position of a particle is described by two physical quantities. (1). Distance (2). displacement

**5).DISTANCE:-** The distance travelled by the particle is the measurement of actual path followed by that particle in the given time interval. It is scalar quantity and is measured in m, cm, km, mile, foot etc.

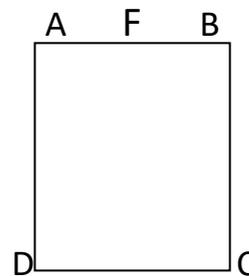
**6).DISPLACEMENT:-** The shortest distance between two points or the minimum distance between two points or the direct distance between two points is called displacement of the particle. It is a vector quantity and measured by the measuring of line segment  $\overline{AB}$ .

Q). A farmer moves along a boundary of a square field of side 10m in 40 second. What will be the magnitude of displacement of the farmer at the end of 2m 5sec. from initial position?

Ans- 2 Mins 5sec:  $60+60+5=125\text{sec}$

No of revolutions=  $3\text{ cycle}+1/2\text{ cycle}$

$$|\text{displacement}| = |\vec{AF}| = 5\text{m}$$



**7).UNIFORM MOTION:-** When an object travels equal distance in equal time interval along a straight line. Then the motion of an object is called uniform linear motion.

**8).AVERAGE SPEED (V):-** If the total distance travelled by a particle divided by the total time taken then it is called an average speed of the particle in that time interval.

$$\text{Average speed} = \text{total distance}/\text{total time}$$

