CLASS IX
SAMPLE PAPER
SCIENCE

MOTION

1.Under what conditions can a body travel a certain distance & yet its resultant displacement be zero?

2.Differentiate between distance and displacement.

3.Ant travels a distance of 8 cm from P to Q and then moves a distance of 6 cm at right angle to PQ.Find its resultant displacement.

4.A scooterist covers a distance of 3 km in 10 minutes. Calculate his speed in cm/s,m/s & km/h.

5.Define average speed, uniform speed, uniform velocity, uniform acceleration.

6.Name the physical quantity obtained by dividing distance travelled by time taken to travel that distance.

7.A car travels 100km at a speed of 60 km/h & returns with a speed of 40 km/h. Calculate the average speed.
8.Differetiate speed & velocity, acceleration & retardation.

9.Give one example of a situation in which a body has a certain average speed but its average velocity is zero.

10.Atrain starting from station attains a spped of 21 m/s in 1 min. Find acceleration.

11.Find initial velocity of a car which is stopped in 10 sec by applying brakes. The retardation due to brakes is 2.5 m/s.

12.A car acquires a velocity of 72 km/h in 10 sec starting from rest.
Find (a) acceleration (b) average velocity (c) distance travelled in this time.

13.Derive equations of motion by graphical method.

14. The tip of seconds hand of a clock takes 60 sec to move once on the circular dial of the clock. If the raius of the dial of the clock be 10.5 cm , calculate spped of tip of second's hand of clock.

15. Differetiate between uniform linear motion 7 uniform circular motion.

16. Why motion of a body which is moving with constant speed in a circular path is said to be accelerated?

17. What does the slope of distance- time graph indicate?

18. The speed- time graph of an ascending passenger lift is given below:-
What is acceleration of the lift
   (a) During first 2 sec?
   (b) Between 2nd & 10th sec?
   (c) During last 2 sec?
   (d)
19. Name the quantity which is measured by area occupied under velocity- time graph.

20. What does the slope of a speed – time graph indicate?

21. A car is moving on a straight road with uniform acceleration. The speed of car varies with time as follows:-

Time(sec) :	0	2	4	6	8	10
Speed(m/s):	4	8	12	16	20	24

Draw speed time graph by choosing convenient scale.From this graph calculate
   (a) Acceleration of a car   (b) distance travelled in 10 sec
   (b)
22. The graph shows the spped of a car changes with time
(a) what is initial speed of car?
(b) what is maximum speed attain by car?
(c) which part of graph shows zero acceleration?
(d)which part of graph shows varying retardation?
(e)find the distance travelled in first 8 sec.

23. What type of motion is represented by each one of the following graphs?