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Motion and Time

ORAL QUESTIONS

A. Answer these questions orally.

1. Name the device used to measure time.
2. What is the full form of NPL?
3. What is the SI unit of measurement of time?
4. One hour is equal to how many seconds?
5. What is the symbol for (a) speed (b) distance, and (c) time?
6. What is m/s pronounced as?

B. Rewrite these statements correctly.

1. To and fro motion of an object, on a fixed mean position is called a pendulum.
2. The resting position of the bob of a pendulum is called its extreme position.
3. Distance travelled by an object is the ratio of speed travelled by the object to the time taken to travel that distance.
4. An object covering equal distances in equal intervals of time is said to have nonuniform motion.

PUZZLES/QUIZ

C. Find atleast ten terms related to chapter Motion and Time, hidden in the word maze.

O	V	B	A	L	T	A	N	Z	M	L	P	M
S	S	P	E	E	D	L	L	A	N	P	L	E
C	S	C	T	R	P	R	T	X	O	E	E	A
I	U	N	I	F	O	R	M	N	N	W	N	N
L	N	P	M	L	E	C	R	P	U	Q	X	P
L	D	T	E	I	L	J	E	Q	N	S	W	O
A	I	F	P	O	D	A	S	W	I	Z	X	S
T	A	E	E	P	G	R	T	Y	F	X	B	I
I	L	G	R	A	P	H	S	O	O	B	M	T
O	K	G	I	E	H	D	V	R	R	E	R	I
N	B	V	O	X	D	S	B	C	M	Y	T	O
P	E	N	D	U	L	U	M	D	U	I	P	N
X	E	L	P	G	E	O	M	O	T	I	O	N

D. Try to answer.

1. When is a body said to possess uniform motion?
2. When is a body said to possess nonuniform motion?
3. What is an odometer?
4. What is a speedometer?
5. What is one nanosecond?

CLASS TEST

E. MCQ–Tick (✓) the correct option.

1. The time period of a pendulum depends upon its
   (a) Displacement ☐ (b) Mass ☐
   (c) Length ☐ (d) None of these ☐
2. Average speed is calculated by
   (a) Dividing the total time taken by the total distance travelled by an object. ☐
   (b) Dividing the total distance travelled by an object by the total time taken. ☐
   (c) Multiplying the total time taken by the total distance travelled by an object. ☐
   (d) Multiplying the total distance travelled by an object by the total time taken. ☐
3. The formula to calculate speed of an object is
   (a) $v = S \times t$ ☐ (b) $S = \frac{v}{t}$ ☐
   (c) $t = \frac{v}{s}$ ☐ (d) $v = \frac{s}{t}$ ☐

F. Very short answer questions.

1. What do you understand by the term 'speed'?

2. When is a body said to be in motion?

3. When is a body said to be at rest?

4. What is a stopwatch?

5. Give the formula to calculate average speed of a car.

6. What will be the average speed of a scooterist if it covers 90 km in 2 hrs?

7. What is the shape of the distance-time graph for a body moving with a uniform motion?

8. What is the shape of the distance-time graph for a body with zero-speed?

9. What is the accurate source for time keeping?

G. Short answer questions.

1. Why do we need to measure time?

2. What do you understand by the following terms?

   (a) Pendulum

   (b) Speed

   (c) Oscillatory motion

3. Himani is driving her car at a speed to 60 km/hr. How far will she be travelling in 7 hrs?

4. A bus travelled the first 40 km of a journey in one hour and the next 100 km in 4 hrs. Calculate the average speed of the bus driving this journey.

5. A scooter is moving at a speed of 36 km/hr. What is the speed in m/s?

6. What do you understand by the statement: The speed of a car is 30 km/hr?

H. Long answer questions.

1. Draw a distance-time graph for the following data.

TIME TAKEN (HOURS)	DISTANCE TRAVELLED (KILOMETRES)
0	0
1	20
2	40
3	60
4	80
5	100

2. Draw the distance time graph for the following data.

TIME TAKEN (HOURS)	DISTANCE (KILOMETRES)
0	0
1	25
2	35
3	50
4	65
5	90

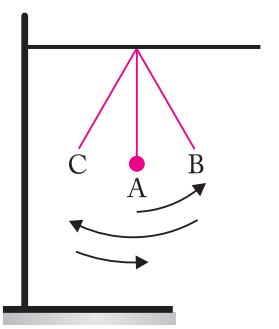
HOME ASSIGNMENT

I. Think and Answer.

1. Study the figure shown here. Now answer the following questions.

(a) What is the freely hanging heavy object of the pendulum called?

(b) What is the normal or the resting position of this freely hanging object called? What is it marked by in this figure?

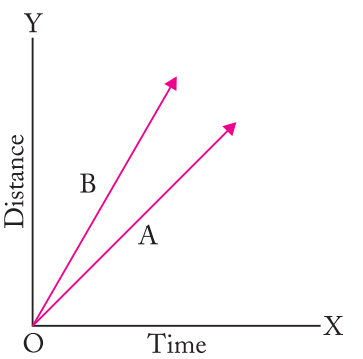


(c) Name the extreme positions of this object.

(d) Which movements marked by the arrows in the figure represent on oscillation?

(e) What will be the time period of the pendulum if it completes 20 oscillations in 30 seconds?

2. Study the following graph which shows the motion of two trains A and B. Can you say which of them is moving faster?



3. A cheetah is running at a speed of 90 km/hr whereas a train is moving at a speed of 20 m/s. Which of them is moving faster?

4. Akash walked 50 m in 10 seconds. How long will it take him to cover a distance of 2 km? Calcualte his speed in km/hr.

WORKSHEET

J. Give reasons for the following.

1. The motion of a bee to collect nectar from flowers is considered a nonuniform motion.

2. The motion of a bird flying at a speed of 30 km/hr is considered a uniform motion.