Class Notes

Class: VII	Topic: Extra questions
Subject: Science	Chapter 13 Motion and Time

The content is to be written in the notebook.

NCERT Exercise questions:

Ans 8 (ii) Speed = distance / time

Ans 9 (iv) m/s

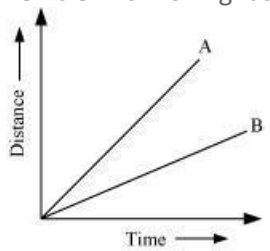
Ans 10 (ii) 25 km
Case I: Speed of the car = 40 km/h
Time taken = 15 min = 15/60 = 0.25 h
Speed = distance / time
Distance covered d_1 = speed X time = 40 X 0.25 = 10 km.
Case II :
Speed of the car = 60 km/h
Time taken = 15 min = 15/60 = 0.25 h
Speed = distance / time
Distance covered d_2= speed X time = 60 X 0.25 = 15 km.

Total distance covered by the car is d = $d_1 + d_2$ = 10 +15 = 25 km.

Ans 11.
The distance covered by the blue car (as evident from the photograph) from one horizontal white strip to another, which is measured by scale is 1.2 cm.
It is given that 1 cm is equivalent to 100 m.
Therefore, 1.2 cm is equivalent to 120 m.
Distance travelled by the car = 120 m
Time taken to cover this distance = Time interval between the two photographs = 10 s

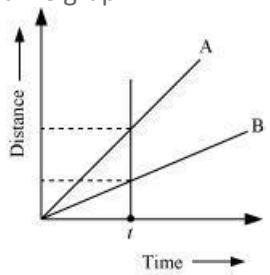
$$\text{Speed} = \frac{\text{Distance covered}}{\text{Time taken}} = \frac{120}{10} = 12 \text{ m/s}$$

Ans 12
Vehicle A is moving faster than vehicle B.



$$\text{Speed} = \frac{\text{Distance covered}}{\text{Time taken}}$$

This relation shows that the speed of a vehicle is greater if it covers greater distance in a given interval of time. To compare the distance, draw a line perpendicular to the time-axis, as shown in the following distance-time graph.



From the graph, it is evident that for a given time *t*, the distance covered by vehicle A is greater than that covered by vehicle B. Hence, vehicle A is moving faster than vehicle B.

Ans 13

Graph (iii)

Reason: A curved line on the distance-time graph indicates that the body is moving with a speed which is not constant.

Extra Questions answers:

Q1. Difference between uniform and non uniform motion.

Ans 1.

Uniform Motion	Non Uniform Motion
1. When a body moves equal distance in equal interval of time, then the body is said to be in uniform motion.	1. When a body moves unequal distance in equal interval of time, then the body is said to be in non uniform motion.
2. In this case direction of motion remains same.	2. In this case direction of motion changes.
3. Distance-time graph shows straight line.	3. Distance-time graph shows curved line.
4. Movement of hands of clock, rotation of earth.	4. Horse running in race, Dragging of box.

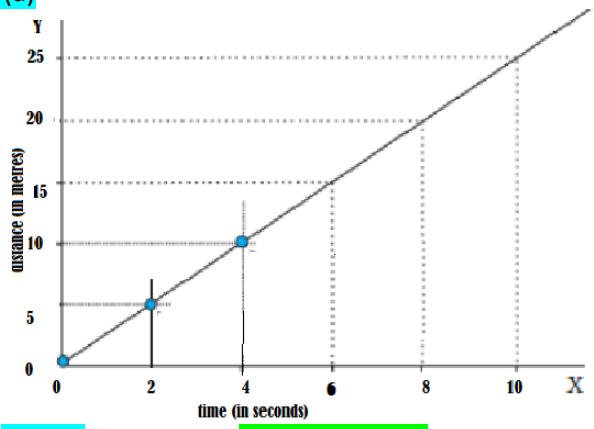
Q2. The distance travelled by a car at various time interval are given as follows:

d(metre)	0	5	10	15	20	25
T(seconds)	0	2	4	6	8	10

(a) Draw the distance-time graph for the car.

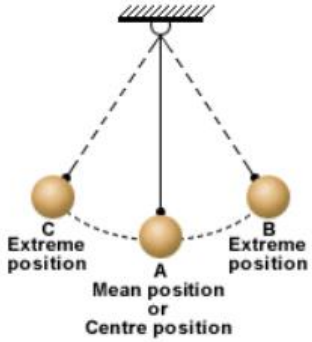
(b) What conclusion do you get from the nature of the motion of car?

Ans (a)



Ans (b) The car is in uniform motion.

Q3. A Simple pendulum is oscillating between two points B and C as shown in figure in the motion of the bob is uniform or non uniform ?



(b) Motion of a simple pendulum

Ans 3. The motion of bob is non-uniform as it does not cover equal distance in equal intervals of time.

Q4. What is oscillatory motion? How a pendulum can be used to determine:

(a) Oscillation (b) Time period (c) Frequency

Ans 4. Oscillatory Motion: The to and fro motion of a body is called as oscillatory Motion.

(a) The to and fro motion of the bob to complete one cycle is called one oscillation.

(b) The time taken to complete one oscillation is called time period. It is denoted by letter 'T' and unit of it is second.

(c) The total number of oscillation completed in one second is defined as frequency. It is denoted by the Latin letter "f". The unit of frequency is hertz.

Q5. What is basic difference between speedometer and odometer?

Ans 5. Speedometer is an instrument on a vehicle's dashboard which indicates the speed of the vehicle in km/h, when it is moving. On the other hand Odometer is an instrument used for measuring the distance travelled by a vehicle in kilometers.

This content is absolutely prepared at home.