	INDIAN SCHOOL AL WADI AL KABIR	
CLASS: 7	DEPARTMENT: SCIENCE	DATE OF COMPLETION: 16.08.2020
WORKSHEET NO.: 6 With answers	Topic: MOTION AND TIME	Note: A4 FILE FORMAT
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

I OBJECTIVE TYPE QUESTIONS:

- The standard unit of speed is-
 - km/h
 - m/s**
 - km/min
 - m/h
- The slope of the distance-time graph represents _____ of the object.
 - Distance
 - Time
 - Speed**
 - None of them
- The time taken by a given pendulum of given length to complete one oscillation is-
 - Different at different times
 - Same at all times**
 - Increases at different times
 - Decreases at different times
- The clocks and watches which are used for measuring time are based on:
 - Rectilinear motion
 - Circular motion
 - Periodic motion**
 - Rotational motion
- Which instrument in the car shows the distance covered?
 - Speedometer
 - Anemometer
 - Odometer**
 - Hydrometer
- When a body covers equal distance in equal interval of time then it is-
 - Periodic motion
 - Non-uniform motion
 - Average speed
 - Uniform motion**
- Clock **X** has minute hand and hour hand whereas clock **Y** has hour, minute and second hands. Which of the following statements is correct for them?
 - Time interval of 20 seconds can be measured by both the clocks X and Y
 - Time interval of 2 hours and 20 minutes can be measured by clock X only.

iii) Time interval of 6 minutes and 25 seconds can be measured by clock Y only.

iv) Time interval of 5 minutes and 5 seconds can be measured by both the clocks.

For the following questions, two statements are given- one labeled Assertion (A) and the other labeled Reason (R).

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

i) Both A and R are true and R is correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

8. Assertion (A): When a pendulum moves to and fro from its fixed position it is said to complete one oscillation.

Reason (R): Time period is the time taken by a pendulum to complete one oscillation.

Ans (ii) Both A and R are true but R is not the correct explanation of the assertion.

9. Assertion (A): The revolution of the earth around the sun is a periodic motion.

Reason (R): The type of motion where object repeats its motion after equal intervals of time is called as periodic motion.

Ans. (i) Both A and R are true and R is correct explanation of the assertion.

10. Assertion (A): A faster moving object covers more distance in less time.

Reason (R): The speed of faster moving object is less.

Ans. (iii) A is true but R is false.

I. BASIC CONCEPTS LEVEL QUESTIONS:

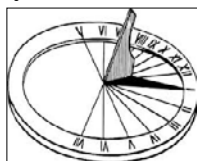
1. Name any two devices which were used for measuring time in ancient period before pendulum clocks were made. [Hint- sand clock and sundial]
2. Write the formula for calculating speed. [Hint- speed = distance/time]
3. What do the speedometer and odometer of a car record? [Hint: Speedometer of a car records speed of the car in km/h. Odometer of a car measures the distance moved by the vehicle.]
4. What was a year as per our ancestors? [Hint- A year was considered as the time taken by the earth to complete one revolution around the sun.]
5. What is meant by periodic motion? [Hint- The type of motion which is repeated in regular intervals of time.]
6. What do you mean by the statement 'a car is moving with the speed of 50km/h'? [Hint: The car has covered 50 kilometre in 1 hour.]
7. What is meant by an oscillation of a simple pendulum? [Hint: The pendulum completes one **oscillation** when its bob moves from one extreme position **A** to the other extreme position **B** and comes back to **A**.]
8. What is meant by time period of a simple pendulum? How can you calculate it? [Hint: The time taken by the pendulum to complete one oscillation is called its **time period**.
Time period = Time taken / Number of oscillations]

9. What are quartz clocks? Write its advantage. [Hint- Quartz clock is a special type of clock or watch which have an electric circuit with one or more cells. It gives more accurate time.]

II. INTERMEDIATE LEVEL QUESTIONS:

1. Distinguish between uniform and non-uniform motion. [Hint-If a body covers equal distances in equal intervals of time, then the motion is said to be uniform. If a body covers unequal distances in equal intervals of time, then its motion is called as non- uniform motion.]

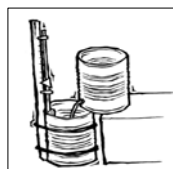
2. Identify the time measuring devices given below:



[Sundial



Sand clock



Water clock]

3. A rocket travels at a speed of 15,000 m/s. Express this speed in km/h. [Hint- 54,000km/h]

4. Draw a neat diagram of a simple pendulum showing its mean and extreme positions.

5. A simple pendulum takes 15 seconds to complete 5 oscillations. What is the time period of pendulum? [Hint- 3s]

6. A truck travels a distance of 540 km in 4.5 hours. Calculate its speed. [Hint- 120km/h]

7. A car covers 20 km in 1st hour of his journey, 40 km in next hour and 30 km in 3rd hour. Calculate the average speed. [Hint-30 km/h]

8. A bus travels a distance of 480 km in 8 hours and a train covered a distance of 1200 km in 10 hours. Which one of the two travels faster- car or a train?

[Hint: Car-60km/h, Train- 120km/h. Train travels faster]

9. Find the distance between New Delhi to U.S.A, if an airplane moving with a speed of 900 km/h takes 12 hours to travel from Delhi to U.S.A. [Hint- 10,800 km]

10. Rohan cycles down from his house to his school at a speed of 18 km/h and reaches in 30 minutes. How far is his school from his house? [Hint- 9km]

11. A boy walks at a speed of 4 km/h. How much time does he take to walk a distance of 20 km? [Hint- 5 h]

12. At 7.00 am, the odometer of a car reads 25777. What is the distance covered by the car and its speed when the clock reads 9.15 am and the odometer reads 25867? [Hint- 90km, 40 km/h]

13. Plot the distance time graph for the given values-

Distance(m)	0	10	20	30	40	50
Time(s)	0	2	4	6	8	10

Distance(m)	0	1	4	9	16	25	36
Time(s)	0	2	4	6	8	10	12

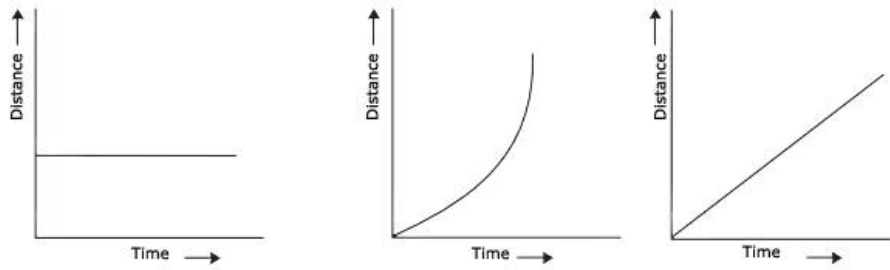
Distance(km)	0	5	10	15	20	20
Time(min)	0	5	15	20	30	35

Distance(km)	5	10	15	20	25
Time(min)	2	5	9	10	16

IV. ADVANCE LEVEL QUESTIONS-

1. What is the advantage of distance-time graph? [Hint-Distance-time graphs give information about the nature of the motion of an object like uniform or uniform motion. Motion of an object can be represented by its distance-time graphs.]

2. What do the following graphs indicate?



[Hint- 1- The object is at rest, 2- the object is in non- uniform motion, 3- the object is in uniform motion]

V. EXEMPLAR QUESTIONS:

1. Given alongside is the distance-time graph of the motion of an object.

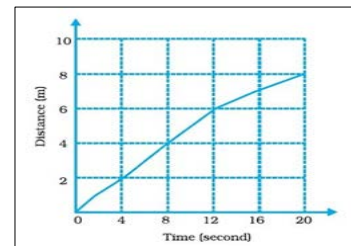
i) What will be the position of the object at 20s?

[8m from the starting point]

ii) What will be the distance travelled by the object in 12s?

[6m]

iii) What is the average speed of the object? [$8/20=0.4\text{m/s}$]



2. Boojho goes to the football ground to play football. The distance time graph of his journey

from his home to the ground is given below-

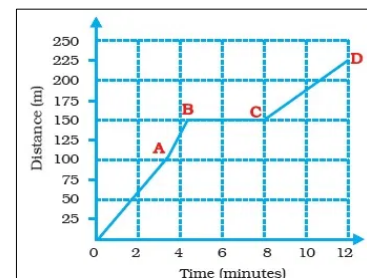
i) What does the graph between point B and C indicate about the motion of Boojho? [Since B and C is parallel to time axis, so it indicates that he is at rest i.e., his speed is zero.]

ii) Is the motion between 0 to 4 minutes uniform or

non-uniform? [Since the graph is not a straight line, it is non-uniform]

iii) What is his speed between 8 and 12 minutes of his journey?

[Speed = distance/time = $225 - 150 / 12 - 8 = 75 / 4 = 18.75 \text{ m/min}$]



Prepared by- Mrs. Leena Chaudhary

CHECKED BY HOD – SCIENCE

10.08.2020