KALPAVRUKSHA MODEL SCHOOL

Online Class Assignment-5

Class: VII **Sub: Physics** **Date: 17.6.2021**

Topic: TIME AND MOTION

I. Answer the following questions:

1. **The distance between Delhi to Pune is 250 kilometer. A car takes 5 hrs to complete the distance. Calculate the speed of the car.**

ANS: Given: Distance travelled by the car = 250 km
Time taken to cover the distance between 2 places = 5 hrs
Therefore,
Speed = distance travelled/ time taken
= 250/5
= 50 km/hr

2. **A train travelling at uniform speed takes 10 hours to cover a distance of 1200km. express its speed in km/h and m/s.**

ANS: **given:** Distance travelled by train =1200km
Time taken to travel this distance= 10 h

$$\text{Speed[s]}=\frac{\text{distance travelled d}}{\text{time taken t}}$$

$$S=\frac{1200\ \text{km}}{10\ \text{h}}=120\text{km/h}$$

1km/h=5/18m/s therefore,
120km/h=120× 5/18=33.3m/s.

3. **A rocket travels at a speed of 15,000m/s. Express this speed in km/h.**

ANS: 1kh/h=5/18m/s
therefore, 15000m/s= 15000×18/5 =54000 km/h.

4. **Amit's school bus travels at 36km/h and Sushma's school bus travels at 11 m/s, whose school bus travels faster?**

ANS: Given Speed of Amit's school bus=36km/h=36×5/18 m/s=10m/s.
Speed of Sushma's school bus=11m/s.

Since Sushma's school bus travels 11m/s, whereas Amit's school bus travels 10m/s.

Therefore Sushma's school bus travels faster than Amit's.

5. **Show that 1km/h= 5/18 m/s.**

ANS: We know that, 1km=1000m.

1h=3600s

Therefore, $1\text{km/h} = \frac{1000\text{m}}{3600\text{s}}$

$= 5/18\text{m/s}.$

6. **The distance between two stations is 360 km. A train takes 6 hours to cover this distance. Calculate the speed of the train?**

ANS: **given:** Distance travelled by train =360km

Time taken to travel this distance= 6 h

$\text{Speed[s]} = \frac{\text{distance travelled d}}{\text{time taken t}}$

$S = \frac{360\text{ km}}{6\text{ h}} = 60\text{km/h}$

7. **A bus covers a distance from A to B at 40 km/h and while returning it travels at 50 km/h. calculate the average speed?**

ANS: A bus covers a distance from A to B at 40 km/h and while returning it travels at 50 km/h. Average speed=Total distance travelled/Total time taken

=40+50/2

=90/2

=45km/h.

8. **A car is moving at a speed of 72 km/hr. Convert this speed into metre/sec.**

ANS: A car is moving at a speed of 72 km/hr.

Speed in m/sec is $S = 72 \times 5/18\text{ m/s} = 20\text{ m/sec}.$

9. **A simple pendulum takes 15 seconds to complete 5 oscillations. What is the time period of the pendulum?**

ANS: Given: Number of oscillations=5

Time taken for 5 oscillations = 15 sec

We know that,

Time period= time taken for no. of oscillations/ number of oscillations

Therefore, time period = 15/5

= 3 second