KALPAVRUKSHA MODEL SCHOOL

Answers of Assignment-4

Class: VII **Sub: Physics** **Date: 10.6.2021**

Topic: TIME AND MOTION

I. Answers:

1. **Define time period.**

ANS: The time taken to complete one oscillation is called the time period.

2. **On which factor does the time period of pendulum depend?**

ANS: The time period of the pendulum depends on the length of the string.

3. **What is the unit of speed?**

ANS: Meter per second (m/s) is the unit of speed.

4. **Two pendulums A and B each have a length of 2m. The bob of pendulum A weighs 20 g and that of B weighs 22g. Which pendulum will have a greater time period?**

ANS: Both the pendulums would have the same time period because the time period is independent of the mass of the bob and it only depends on the length of the pendulum. Here the length is fixed at 2m for both the pendulums.

5. **If a simple pendulum takes 30 seconds for 15 oscillations then Calculate the time period.**

ANS: Given: Number of oscillations=15

Time taken for 15 oscillations = 30 sec

We know that, time period= $\frac{\text{time taken for number of oscillations}}{\text{Number of oscillations}}$

Therefore, time period = 30/15

Time period = 2 second

6. **What are quartz clocks?**

ANS: Quartz clocks and quartz watches are timepieces that use an electronic oscillator regulated by a quartz crystal to keep time.

7. **Define speed**.

ANS: The distance travelled by an object in unit time is called speed.

8. **Write the two differences between slow and fast motion**.

ANS:

FAST MOTION	SLOW MOTION
1. If an object takes less time to cover a distance as compared to another object, its motion is said to be fast motion.	1. If an object takes more time to cover the same distance as compared to another object, its motion is said to be slow motion.
2. fast moving body has higher speed	2. slow moving body has less speed

9. **Explain how to calculate Time period of a simple pendulum?**

ANS: Tie one end of the thread to rigid support and the other to the bob. Now we want to calculate the time period so take the bob to the extreme position (B) leave so it swings freely and start the stop clock. At the same time it passes the mean position and comes to another extreme position (C) it completes one oscillation. The time we note down from the stop clock so this time taken by the pendulum to complete one oscillation is called the time period of the pendulum.

10. **List out the uses/applications of modern clocks**.

ANS: i) frequency of television broadcasts,

ii) In global navigation satellite systems such as GPS.

iii) Atomic clocks are used in many scientific disciplines, such as for long-baseline interferometry in radio astronomy.

iv) Atomic clocks are installed at sites of time signal radio transmitters.