

Class-6

Subject- Science

Chapter- 10

Motion and Measurement of Distances.

Exercise Questions

1. Give two examples each, of modes of transport used on land, water and air.

Ans: Land- Train., Bus

Water- Ship, Boat

Air- Helicopter, Airplane

2. Fill in the blanks:

Solution:

(i) 100 cm.

(ii) 5000 m.

(iii) periodic.

(iv) periodic.

(v) circular.

3. Why can a pace or a footstep not be used as a standard unit of length?

Ans: Pace or a footstep cannot be used as a standard unit of length because it varies from person to person.

4. Arrange the following lengths in their increasing magnitude: 1 metre, 1 centimeter, 1 kilometer, 1 millimeter.



Solution: 1 millimeter, 1 centimeter, 1 metre, 1 kilometer

5. The height of a person is 1.65 m. Express it into cm and mm.

Solution:

$$1.65\text{ m} = 165\text{ cm} = 1650\text{ mm}$$

6. The distance between Radha's home and her school is 3250 m. Express this distance into km.

Solution:

$$1\text{ km} = 1000\text{ m}$$

$$\text{Hence } 3250\text{ m} = 3.25\text{ kms}$$

7. While measuring the length of a knitting needle, the reading of the scale at one end is 3.0 cm and at the other end is 33.1 cm. What is the length of the needle?

Solution:

$$\text{Length of needle} = 33.1 - 3 = 30.1\text{ cm}$$

8. Write the similarities and differences between the motion of a bicycle and a ceiling fan that has been switched on.

Solution: Similarities- Both show circular motion

Differences- Bicycle wheels move in rectilinear motion, but the fan does not move in rectilinear motion.

9. Why would you not like to use a measuring tape made of an elastic material like rubber to measure distance? What would be some of the problems you would meet in telling someone about a distance you measured with such a tape?

Ans: An elastic measuring tape will not give accurate measurement as it stretches in length and reduces in size when stretched. When we express measurement taken with elastic tape, we

have to tell whether the tape was stretched. If yes, how much. Hence it is very difficult to tell the measurement taken from an elastic tape.

10. Give two examples of periodic motion.

Ans: a) A needle of a sewing machine

b) Pendulum

Additional Questions:-

Q.1 What is measurement?

Ans: Measurement is the technique developed for correct judgement of dimensions of various objects.

Q.2 What is unit?

Ans: A quantity adopted as a standard of measurement of a physical is called unit.

Q.3 Name the two parts which must be mentioned to state the results of a measurement.

Ans: Magnitude and unit are the two parts which must be mentioned to state the results of a measurement.

Q.4 What is the system used for measurement nowadays?

Ans: S.I. system.

Q.5 Name the unit of length, which should be used to express the thickness of a coin.

Ans: Millimetre (mm).

Q.6 Name the SI unit for following.



- i) Length- metre
- ii) Time- second (s)
- iii) Temperature- Kelvin (k)
- iv) Electric current- ampere (A)
- v) Mass- kilogram (kg)

Q.7 Which device we can use to measure the length of curved line?

Ans: Thread.

Q.8 What is rectilinear motion?

Ans: When an object in translational motion moves in a straight line, it is said to be in rectilinear motion. Example: Motion of a car on a straight road.

Q.9 What is periodic motion?

Ans: The motion which repeats itself after regular intervals of time, is called periodic motion. Example: Motion of pendulum of a 'pendulum clock'.

Q.10 What is rotational motion?

Ans: When an object turns (or spins) about a fixed axis, it is called rotational motion. For example, the motion of a spinning top, the spinning of earth on its axis.

Q.11 What is circular motion?

Ans: Movement of an object along a circular path is called circular motion. Direction of moving body always change in circular motion. For example, the moon moves around the earth, the earth moves around the sun.



Fig. 10.5. Some objects in circular motion

Q.12 State the difference between circular motion and rotational motion.

Ans: The difference between circular motion and rotational motion is that in circular motion an object as a whole travels along a circular path but in rotational motion, the object spins on its axis.