CHAPTER – 7

Motion and Measurement of Distances

Q. 1

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

Answer:

Mode of transport	Examples
On land	Train, Bicycle
On water	Ship, Boat
In air	Aero plane, Helicopter

Q. 2

Fill in the blanks:

i. One meter is _____cm.

ii. Five kilometers is _____m.

iii. Motion of a child on a swing is ___.

iv. Motion of the needle of a sewing machine is ___.

v. Motion of wheel of a bicycle is ___.

Answer:

i. 100, ii. 5000, iii. Periodic motion, iv. Periodic motion, v. circular motion.

Q. 3

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

Answer:

A pace or a footstep cannot be used a standard unit of length as length of footstep or hand span of different person is different. Thus, the measurement will not be the same for different people.

Q. 4

Arrange the following lengths in their increasing magnitude:

1 meter, 1 centimeter, 1 kilometer, 1 millimeter.

Answer:

1 kilometer (km) = 1000 meter (m)

1 meter (m) = 100 centimeter (cm)

1 centimeter (cm) = 10 millimeter (mm)

Hence, the ascending order of given unit is as follows:

1 millimeter < 1 centimeter < 1 meter < 1 kilometer.

Q. 5

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

Answer:

The height of a person is 1.65 m.

As we know 1 meter = 100 cm; and 1000 mm

Thus, 1.65 m = 1.65 × 100 = 165 cm;

= 1.65 × 1000 = 1650 mm.

Q. 6

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

Answer:

The distance between Radha's home and her school is 3250 m.

I kilometer = 1000 m

So, 3250 m = 3250/ 1000 Km

= 3.25 Km

Q. 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 33.1ccm. What is the length of the needle?

Answer:

The reading of the scale at one end is 3.0 cm.

The reading of the scale at the other end is 33.1 cm.

Thus, the length of the needle is = 33.1 cm − 3.0 cm = 30.1 cm

Q. 8

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

Answer:

Similarity: Both the wheel of a bicycle and ceiling of fan execute a circular motion on a fixed axis.

Dissimilarity: A bicycle executes a rectilinear motion while a ceiling fan does not execute rectilinear motion.

Q. 9

Why could you not use an elastic measuring tape to measure distance? What would be some of the problems you would meet in telling someone about a distance you measured with an elastic tape?

Answer:

Elastic tape gives incorrect measurement because the length of elastic tape varies and depends upon the force by which it is stretched. It would be difficult to tell someone about the extend by which tape was stretched while measuring the distance with elastic tape.

Q. 10

Give two examples of periodic motion.

Answer:

Motion of a pendulum and motion of a Child on the swing are examples of periodic motion where an object or a part of it repeats its motion after a fixed interval of time.