



Chapter -10

Motion and measurement of Distances

Exercises

Q1. Give two examples each of modes of transport used on land, water and air.

Ans. Two modes of transport used on
land ----- bus and train
water----- ship and boat
air ----- aeroplane and helicopter.

Q2. Fill in the blanks:

Ans. (i) One metre is 100 cm.
(ii) Five kilometer is 5000 m.
(iii) Motion of a child on a swing is periodic motion.
(iv) Motion of the needle of a sewing machine is Periodic motion.
(v) Motion of wheel of a bicycle is circular motion.

Q3. Why can a pace or a footstep not be used as a standard unit of length?

Ans. A pace or a footstep cannot be used as a standard unit of length because a pace or a footstep of each and every person is not equal.

Q4. Arrange the following lengths in their increasing magnitude:

1 metre, 1 centimetre, 1 kilometre, 1 millimetre.

Ans. $1\text{mm} < 1\text{cm} < 1\text{m} < 1\text{km}$

Q5. The height of a person is 1.65m. Express it into cm and mm.

Ans. Given,

Height of the person = 1.65m

we know that, 1m=100cm

Then, 1.65m = (1.65x100)cm = 165cm

∴ height of the person is 165cm

Again,

Height of the person in mm=?

As 1m = 1000mm

So, 1.65 m = (1.65x1000)mm

= 1650mm

∴ height of the person is 1650mm

Q6. The distance between Radha's home and her school is 3250 m. Express this distance into km.

Ans. Distance between Radha's home and her school = 3250m

We know that 1km = 1000m

i.e. 1m = $\frac{1}{1000}$ km

So, 3250 m = $\frac{3250}{1000}$ km = 3.25 km

∴ the distance from Radha's home and her school is 3.25 km.

Q7. While measuring the length of a knitting needle, the reading of the scale at one end is 3.0cm and at the other end is 33.1cm. What is the length of the needle?

Ans: Length of the needle = 33.1cm – 3.0cm

= 30.1cm

Q8. Write the similarities and differences between the motion of a bicycle and a ceiling fan that has been switched on.

Ans: Similarities:-

I.The blades of a fan and the wheels of a bicycle are fixed at a point.

II.Both have circular motion about their respective fixed points.

Differences:-

A bicycle has rectilinear motion whereas the blades of a ceiling fan have circular motion.

Q9. 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 is stretchable. So, the length of the tape may change on stretching. As a result , the measured length would not be correct.

Some of the problems are:-

I.The length of the elastic tape varies and depends upon the force by which it is stretched.

II.Measurement may also vary if different persons measure the same distance.

Q10. Give two examples of periodic motion.

Ans: The two examples of periodic motion are:-

1) Motion of a pendulum.

2) Motion of a boy sitting on a swing.

Extra Questions and Answers:

Q1. Name some units of measurement used in ancient times.

Ans. Some units of measurement used in ancient times are the length of a foot, the width of a finger and the distance of a step.

Q2. What is the SI unit of length?

Ans. The SI unit of length is metre.

Q3. Define measurement.

Ans. Measurement is the technique or process to be taken up for correct judgement of dimensions of various objects.

Q4. What is motion?

Ans. Motion is the change in position of an object with respect to its surroundings in a given interval of time.

Q5. What is rest?

Ans. If a body does not change its position with respect to its surroundings, the body is said to be in rest.

Q6. What are circular motion and periodic motion?

Ans. Circular motion-The motion of an object in a circular path is called circular motion.

Periodic motion-The motion of an object that repeats itself after regular interval of time is called periodic motion.

Q7. Write true or false

i. Distance is the length of space between two fixed points.(True)

ii. 1centimetre is equal to 10metre.(False)

iii.The motion of an object that moves in a straight line is called rectilinear motion.(True)



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