

CHAPTER - 2

MEASUREMENT OF LENGTH AND MOTION

NCERT FOLDER

I. Very short answer type:

2. How many kilograms are there in 2 metric tons?

Ans: 1 metric ton = 1000 kg
 $\therefore$ 2 metric ton = $2 \times 1000 = 2000 \text{ kg}$.

9. Four friends measured the length of a field. All of them got different result. List minimum three reasons for such discrepancy?

Ans: (i) Using different measuring instruments
 (ii) Parallax error while reading the scale
 (iii) Improper placement of the measuring tape.

II. Short answer type:

2. A 30cm scale has one end broken. The mark at the broken end is 2.6 cm. How would you use it to measure the length of your pencil?

Ans: Place one end of the pencil at 2.6 cm mark of the 30cm scale and note the reading at the other end.

$$\text{Length of the pencil} = \text{Final reading} - 2.6 \text{ cm}$$

Example: Final reading = 17.8 cm

$$\therefore \text{Length of the pencil} = 17.8 \text{ cm} - 2.6 \text{ cm} \\ = 15.2 \text{ cm}$$

$$\begin{array}{r} 17.8 \\ (-) 2.6 \\ \hline 15.2 \end{array}$$

5. What are the reasons for which SI system is recommended?

Ans:

(i) It is a rational system, in which only one unit is used for one physical quantity.

(ii) It is a coherent system, which means all the derived units can be easily obtained from basic and supplementary units.

(iii) It is a metric system which means that multiples and submultiples can be expressed as powers of 10.

7. Distinguish between revolutionary motion and rotatory motion.

Ans:

REVOLUTIONARY MOTION	ROTATORY MOTION
(i) A motion in which a body moves around another body in a fixed path	A motion in which a body moves about a fixed axis without changing its position is called rotatory motion.
(ii) The axis of rotation lies outside the object	The axis of rotation passes through the object
<u>Example:</u> The Earth revolves around the sun	<u>Example:</u> The Earth rotates on its own axis

9. Why don't we use same SI unit for measuring the lengths of different objects or the distances between various objects?

Ans: We don't use the same SI unit for measuring all lengths because the sizes and distances of objects vary greatly.

* Millimetre (mm) - It is used to measure very small objects.

* Metre (m) - It is used to measure the length of objects such as a room or a playground.

* Kilometre (km) - It is used to measure long distances such as the distance between two cities.

10. Why the trees near the track appears to move whereas co-passengers appears to be stationary in a moving train?

Ans: * Trees near the railway track appear to move backward because the train is moving forward.

* Co-passengers appear to be stationary because they are moving along with the train at the same speed as we are.

* So trees appear to move, but co-passengers do not.

iii) Long answer type:

5. Three students measured the length of a corridor and reported their results. The results of all three of them were different from one another.

What could be possible reasons (give any three)?

Ans: The three students may have obtained different measurements due to the following reasons.

- * They may have used different measuring instruments, such as a metre scale, measuring tape or footstep, which have different accuracies.
- * They may have made parallax errors while reading the scale.
- * They may not have started measuring from the zero mark of the scale.
- * The measuring tape or scale may not have been kept straight, leading to an incorrect measurement.