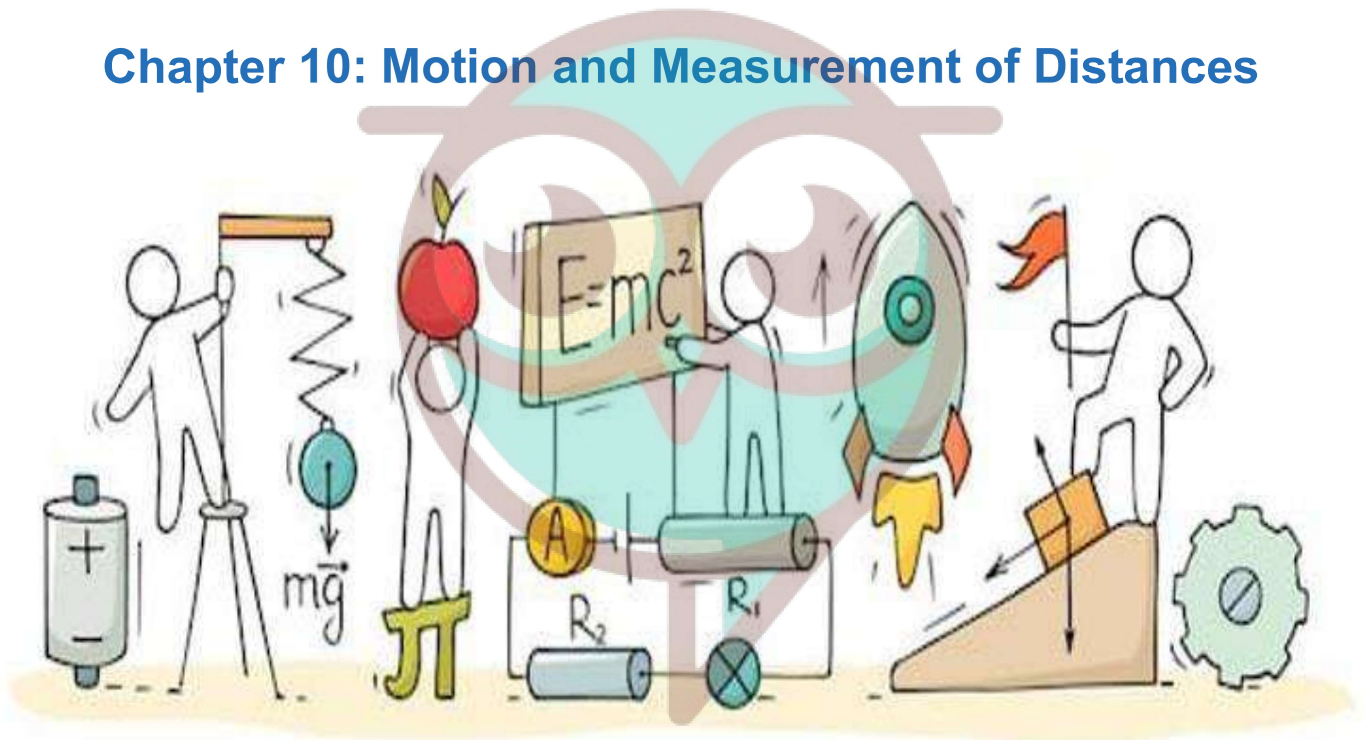# SCIENCE

Chapter 10: Motion and Measurement of Distances

Important Questions

Multiple Choice Questions:

Question 1. Which is a standard unit of measurement?

(a) Angul (finger)

(b) Mutthi (fist)

(c) Step

(d) Inch

Question 2. What is the SI unit of length?

(a) Metre

(b) Centimetre

(c) Kilometre

(d) All of these

Question 3. 4 kilometres are equal to

(a) 4,00,000 metre

(b) 40,000 metre

(c) 4,00p metre

(d) 400 metre

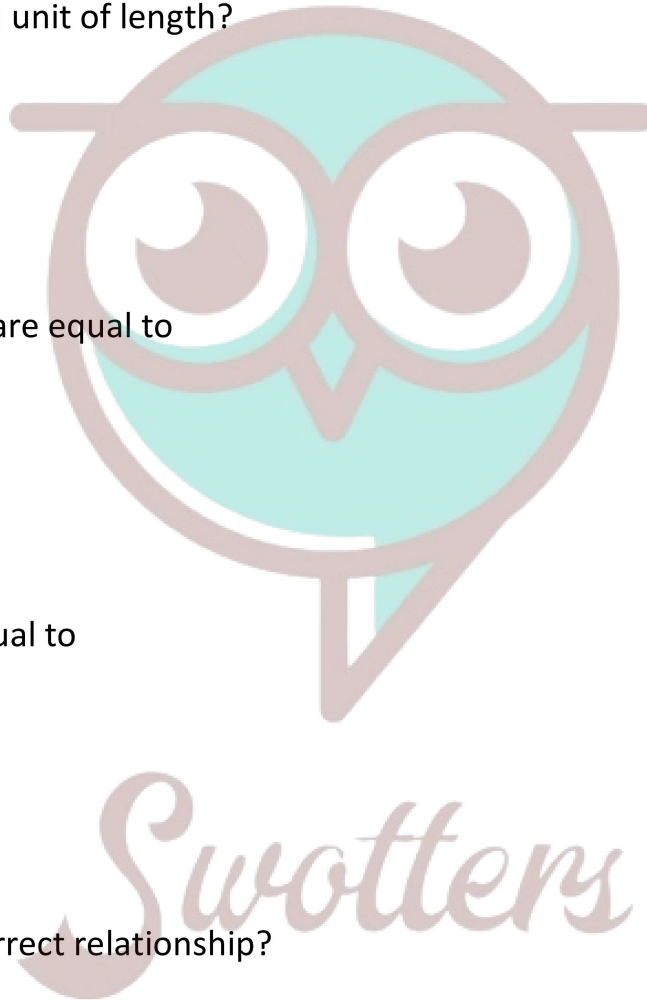Question 4. 15 cm are equal to

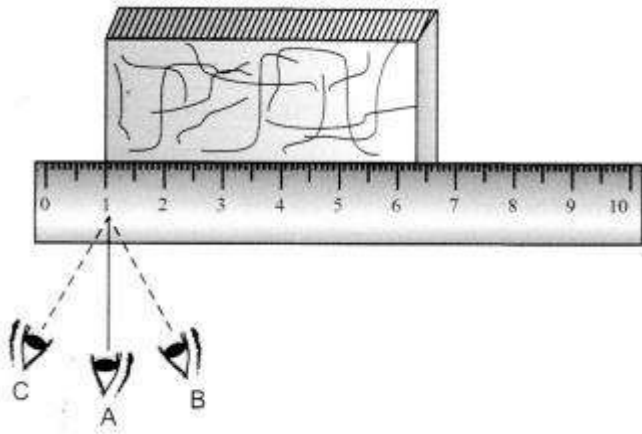(a) 150 mm

(b) 15 mm

(c) 1.5 mm

(d) 0.15 mm

Question 5. Which is a correct relationship?

(a) 1 m = 100 cm

(b) 1 cm = 100 mm

(c) 1 km = 100 m

(d) all of these

Question 6. In the following figure, the proper way of reading scale is

(a) C

(b) B

(c) A

(d) Any way can be choosen

Question 7. An example of rectilinear motion is

(a) apple falling from a tree

(b) motion of a car on road

(c) a spinning top

(d) both (a) and (b)

Question 8. Which is an example of a periodic motion?

(a) Oscillation of a pendulum

(b) Motion of a bus on road

(c) A spinning top

(d) A stone dropped from a certain height

Question 9. What kind of motion is executed by a pendulum of a wall clock?

(a) Oscillatory motion

(b) Vibratory motion

(c) Circular motion

(d) Linear motion

Question 10. One metre is equal to ………….. millimetre.

(a) 10

(b) 1000

(c) 100

(d) 10000

Very Short Question:

1. Are senses reliable for accurate measurement?

2. Why can hand span and arm length not be used as standard units of length?

3. How many centimetres are there in 1 m?

4. Name the measuring device which can be used for measuring the girth of a tree.

5. Give one example of linear motion.

6. Give an example of circular motion.

7. Name the types of motion in which a body moves along a straight path

8. Find the length and breadth of given rectangle in mm and cm.
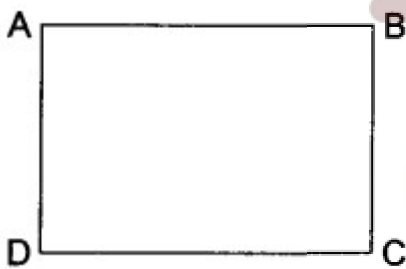
9. Give the unit for measuring the following:

(a) Distance between Delhi and Jaipur.

(b) Thickness of a coin.

(c) Length of your eraser.

(d) Length of your shoe lace.

10. Name the device used to measure the following:

(a) Size of your shoulder.

(b) Size of your wrist.

(c) Your height.

(d) Your weight.

(e) Cloth for curtain.

(f) Circumference of round table.

Short Questions:

1. State two precautions to be observed while measuring length with the help of a metre scale.

2. Define rest and motion.

3. Define the term standard unit.

4. How can a measured length be expressed?

5. Give one example each of the following types of motion:

(a) Linear

(b) Translation

(c) Circular

(d) Periodic.

Long Questions:

1. Why do we need standard unit for measurement?

2. What type of motion do the following objects have?

(a) the galloping of a horse

(b) the needle of a sewing machine

(c) the movements of a mosquito

(d) the blades of an electric fan

(e) the smoke from a lighted dhoopbatti

(f) wheels of moving car.

3. Give two examples for each of the following motions:

(i) Linear motion

(ii) Spinning motion

(iii) Oscillatory motion

(iv) Periodic motion

(v) Vibrational motion

(vi) Circular motion

(vii) Random motion
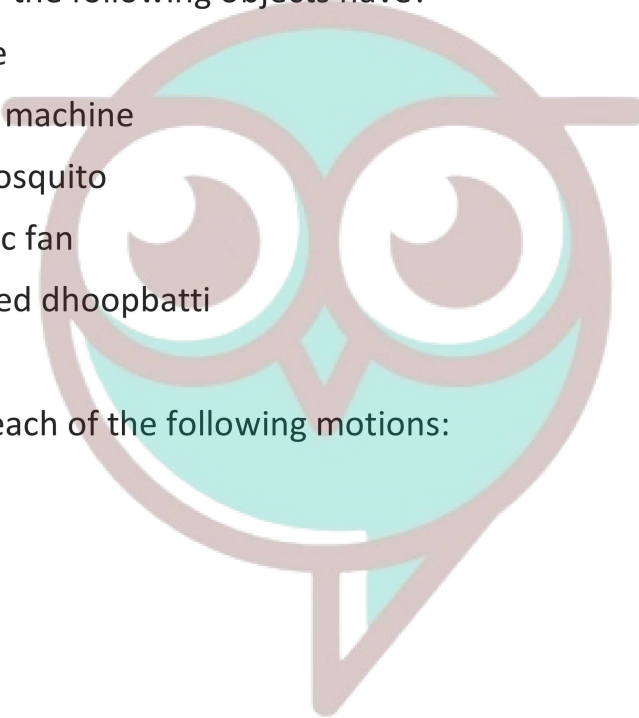
Answer Key-

Multiple Choice Answers:

1. (d) Inch
2. (a) Metre
3. (c) 4,00p metre
4. (a) 150 mm
5. (d) all of these
6. (c) A
7. (d) both (a) and (b)

8. (a) Oscillation of a pendulum

9. (a) Oscillatory motion

10. (b) 1000

Very Short Answers:

1. Answer: Our senses are not reliable for accurate measurement.

2. Answer: because these vary from person to person.

3. Answer: 100 cm.

4. Answer: Measuring tape.

5. Answer: Motion of stone falling from a certain height.

6. Answer: Motion of arms of watch.

7. Answer: Rectilinear or linear motion.

8. Answer: Using measuring scale (15 cm scale), Length AB = 3 cm and breadth BC = 2 cm.

   AB = 3 × 10 = 30 mm

   BC = 2 × 10 = 20 mm.

9. Answer:

   (a) Kilometre

   (b) Millimetre

   (c) Centimetre

   (d) Centimetre

10. Answer:

   (a) Measuring tape

   (b) Measuring tape

   (c) Measuring tape

   (d) Weighing balance

   (e) Metre scale or measuring tape

   (f) A long thread or measuring tape.

Short Answer:

1. Answer: Two precautions are:

   (i) The initial point of distance must coincide with the zero reading of metre scale.

   (ii) The eye should be kept in line with the point of measurement.

2. Answer: The objects which do not change their positions with time are said to be at rest. The objects which change their positions with time are said to be in motion.

3. Answer: The unit that could be used everywhere as a basic unit of measurement is called a standard unit.

4. Answer: Each measurement has:

   (i) A number describing the numerical value.

   (ii) The unit in which that quantity is measured.

5. Answer:

Types of motion	Example
(a) Linear	motion of stone falling
(b) Translatory	buses
(c) Circular	ceiling fan
(d) Periodic	pendulum of clock

Long Answer:

1. Answer: We need standard unit for measurement to make our judgement more reliable and accurate. For proper dealing, measurement should be same for everybody. Thus there should be uniformity in measurement. For the sake of uniformity we need a common set of units of measurement, which are called standard units. Nowadays SI units are used in science and technology almost universally.

2. Answer:

   (a) The galloping of a horse: Linear motion.

   (b) The needle of a sewing machine: Periodic motion.

   (c) Movement of a mosquito: Random motion.

   (d) Blade of an electric fan: Circular motion.

   (e) The smoke from a lighted dhoopbatti: Random motion.

   (f) Wheels of moving car: Linear motion and Rotational motion.

3. Answer:

   (i) Linear motion: (a) Rolling of ball on ground, (b) Moving of bicycle on road,

   (ii) Spinning motion: (a) Rotating fan, (b) Wheel of sewing machine.

   (iii) Oscillatory motion: (a) Pendulum of clock, (b) Motion of a child on a swing,

   (iv) Periodic motion: (a) Pendulum of clock, (b) Motion of a swing, heartbeat.

   (v) Vibrational motion: (a) String of a guitar, (b) Surface of drums.

(vi) Circular motion: (a) Rotation of fan, (b) Bicycle wheel.

(vii) Random motion: (a) Motion of football players, (b) Movement of mosquito.