

Physical Quantities and
Measurement

A. Objective Questions.

1. Write true or false for each statement:

- (a) S.I. unit of temperature is fahrenheit - False
- (b) Every measurement involves two things - a number and a unit. - True.
- (c) Mass is the measure of quantity of matter - True
- (d) The S.I unit of time is hour. - False.
- (e) Area can be expressed as the product of lengths of two sides. - True.

2. Fill in the blanks:

- (a) The S.I unit of length is metre, of time is second of mass is kilogram.
- (b) $^{\circ}\text{C}$ is the unit of temperature.
- (c) 1 metric tonne = 1000 kg.
- (d) The zero mark in Celsius thermometer is the melting point of ice.
- (e) The thermometer used to measure the human body temperature is called the clinical thermometer.
- (f) The normal temperature of human body is 37 $^{\circ}\text{C}$ or 98.6 $^{\circ}\text{F}$.

3. Match the following columns:

A

B.

- | | | |
|-------------------------------|---|---------------------|
| (a) Length of a housing plot. | → | (i) Clock |
| (b) Breadth of a book | → | (ii) Beam balance |
| (c) Mass of an apple | → | (iii) Thermometer |
| (d) Period of time for study | → | (iv) measuring tape |
| (e) Temperature of a body | → | (v) Graph paper |
| (f) Surface area of a leaf | → | (vi) Metre ruler |

4. Select the correct alternative:

(a) The symbol of degree celsius is:

✓ (i) °C

(iii) K

(ii) °F

(iv) °K.

(b) 10 mm is equal to:

✓ (i) 1 cm

(iii) 10 dm

(ii) 1 m

(iv) 10 cm.

(c) The amount of surface occupied by an object is called its:

(i) volume

(iii) mass

✓ (ii) area

(iv) length.

(d) A metre ruler is graduated in:

(i) m

✓ (iii) mm

(ii) cm

(iv) km.

(e) A thermometer is graduated in:

(i) kelvin

(iii) g

✓ (ii) °C

(iv) cm.

B. Short/Long Answer Questions:

1. What is measurement? How is a measurement expressed?

Ans:- Measurement is basically a process of comparison of the given quantity with a standard unit.

A measurement is expressed by a number and a unit.

2. State two characteristics of a unit.

Ans:- (a) It should be of convenient size.

(b) It must be universally accepted.

3. Name four basic measurements in our daily life.

Ans! - (i) Mass
(ii) Length
(iii) Time
(iv) Temperature

4. What are the S.I units of (i) mass (ii) length (iii) time and (iv) temperature. Write their names and symbols.

Ans! - Mass - kilogram (kg)
length - metre (m).
time - second (s).
Temperature - kelvin (K).

5. Define one metre, the S.I unit of length. State its one multiple and one sub multiple.

Ans! - One metre is defined as the distance travelled by light in air in $\frac{1}{299792458}$ of a second (or in $\frac{1}{3 \times 10^8}$) of a second.

multiple : Kilometre
 $1 \text{ km} = 1000 \text{ m}$.

Submultiple : Centimetre
 $1 \text{ cm} = 10^{-2} \text{ m}$.