Class - 6.

Physical Quantities and Measurement

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1. Convert the following quantities as indicated :

(a) 12 inch = 1 ft.
(b) 1 ft = 30.48 cm
(c) 20 cm = 0.2 m
(d) 4.2 m = 420 cm.
(e) 0.2 km = 200 m
(f) 0.2 cm = 2 mm
(g) 1 yard = 0.91 m

7. (i) Define mass. State its (i) S.I (ii) C.G.S and (iii) F.P.S units. How are they related?

Ans: The mass of a body is the quantity of matter contained in it.

S.I unit - kg.
C.G.S unit - g.
F.P.S unit - pound

$$1\,g = \frac{1}{1000}\,kg = 10^{-3}\,kg.$$

$$1\,lb = 453.59\,g.$$

8. Define one kilogram. What is S.I unit of mass. How is it related to (i) quintal. (ii) metric tonne and (iii) gram?

Ans: In 1889 one kilogram was defined as the mass of a cylinder of platinum - iridium alloy kept at the International Bureau of weights and Measures at Sevres near Paris.

At present, the mass of 1 litre of water at 4°C is taken as 1 kilogram.

1 quintal = 100 kg.

1 metric tonne = 1000 kg.

1 gram = 10^{-3} kg.

9. Name and define the S.I unit of time. How is it related to (i) minute (ii) hour. (iii) day and (iv) year.

Ans:- One second is defined as $\frac{1}{86400}$ part of a mean solar day.

1 minute = 60 second.
1 hour = 3600 second
1 day = 86400 second.
1 year = 3.15×10^7 Second.

10. Name two devices used to measure the short time interval of an event.

Ans:- stop clock and stop watch.

11. Express in second.

(i) 3 minute 15 Second
= 3×60 second + 15 second
= (180 + 15) second
= 195 second.

(ii) 5 hour 2 minute 5 second
= (5×60×60 + 2×60 + 5) S
= 18000 + 120 + 5
= 18125 Second.

12. What does the temperature measure?

Ans:- The temperature is the measurement of the degree of hotness or coldness.

13. Name the (i) S.I unit and (ii) one common unit of temperature. Write their symbols also.

Ans:- S.I unit - K. (Kelvin).
common unit - °C. (Celsius).

14. Name the instrument used for measuring the temperature of a person.

Ans:- clinical thermometer.

15. Write the temperature of (i) melting ice (ii) boiling water.

Ans:- melting ice - 0°C.
boiling water - 100°C.

16 What is a clinical thermometer? State its special features.

Ans:- The thermometer used to measure the human body temperature is called clinical thermometer.

Features -

1. It has the markings from 35°C to 42°C
2. It has a kink in the stem just above the bulb.
3.