

CLASS IX PHYSICS

CHAPTER 1. MEASUREMENT AND EXPERIMENTATION

ANSWER KEY

A1.A. a) 1 light year = 9.46×10^{15} m

b) 1 micron = 10,000 Å

c) 1 quintal = 100 kg

d) 1 year = 31556925.9747 sec

e) 1 nano sec = 10^{-9} sec

B.a) iv) the distance moved in one rotation

b) iv) half

SHORT ANSWER TYPE QUESTIONS

A 2. The fundamental quantities are: Mass, length, Temperature, and the respective SI units are kilogram, metre, Kelvin. (YOU CAN WRITE OTHER FUNDAMENTAL QUANTITIES ALSO).

A 3. Speed fundamental quantities: length, time

Volume; fundamental quantities: length

Density; fundamental quantities: length, kilogram

A 4. The requisites are convenient size, without ambiguity, reproducible, should not change with space and time.

A 5. Kilometer, Astronomical unit

A 6. Light year, Parsec

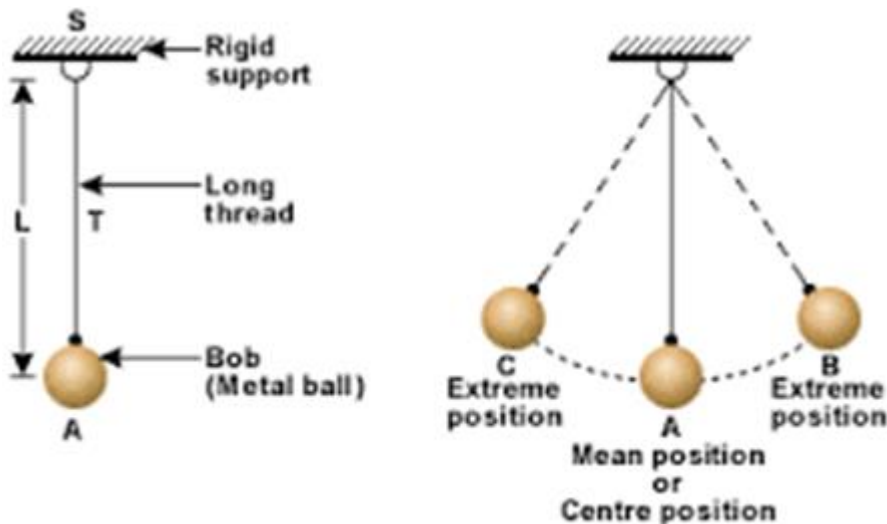
A7. The minimum measurement that can be taken with the given instrument, is called the least count of that instrument. For example, the minimum measurement that you can measure using your scale is 1 mm or 0.1 cm. Hence its least count is 0.1 cm or 1 mm.

A 8. When the outer and inner jaws of the Vernier do not coincide on bringing them together, we say that the scale has zero error. If they coincide it is free of error.

A 9. The pitch of a screw gauge is 0.5 mm and the head scale are divided into 100 divisions. The least count = pitch/number of divisions on the head scale.

Therefore, $0.5 \text{ mm}/100 = 0.005 \text{ mm}$ or 0.00005 cm

A 10.



OSCILLATION – The two and fro motion of a body about a mean position on either side of it, is called an oscillation.

FREQUENCY – The number of oscillations made by a body in one second about its mean position is called frequency.

TIME PERIOD – The time taken by the oscillating body to complete one complete oscillation is called its time period.

AMPLITUDE – The maximum displacement of the oscillating body from its mean position on either side of it, is called amplitude.

EFFECTIVE LENGTH – The length of the simple pendulum from its point of suspension to the mean position, is called its effective length.

A 11. T^2 vs l graph is a straight line. T vs \sqrt{l} graph is also a straight line.

A 12. The new time period will be 3 times that of the old one. Ratio of old time period to new one = 1: 3.
