

Chapter # 1**Physical Quantities and Measurement**

Q.1 What is difference between base quantities and derived quantities? Give three example in each case.

Ans. Base Quantities; The quantity which are expressed on the base of other quantity.

Example. Length ,Mass,Time

Derived Quantities; The quantity that are expressed in term of base quantities.

Example. Area,Volume,Speed

Q.2 Pick out the base unit in following.

Joule,newton,kilogram,hertz,mole,ampere,meter,Kelvin,coloumb and watt

Ans. Kilogram,Mole,Meter,Kelvin

Q.3 Find the base quantity involved in each of the following derived quantities.

a) speed b) volume c) force d) work

Ans. a) length and time b) length c) mass,length and time d) mass,length and time

Q.4 Estimate your age in seconds.

Ans. your age x 365 x 24 x 60 x 60= some thing

Q.5 What role SI unit played in the development of science

Ans. SI unit are easy to use. Their addition,multiplication and division is easy because these can written in term of multiples of ten.

Q.6 What do you understand by the zero error of measuring instrument?

Ans. When zero of vernier scale coincide with zero of main scale then instrument has 'zero error'

Q.7 Why the use of zero error is necessary in measuring instrument?

Ans. To find a correct correction in an instrument the use of zero error is must necessary.

Q.8 What is stop watch? What is the least count of a mechanical stop watch you have used in laboratory?

Ans. Stop Watch; The instrument which is used to measure the time interval of an event.

The least count of a mechanical stop watch is 0.1 second.

Q.9 Why we need to measure extremely small interval of times?

Ans. Small time intervals is measured to calculate instantaneous time rate of change of a variable.

Q.10 What is meant by significant figures of a measurements?

Ans. All the accurately known digit and first doubt full digit in an expression. For example 0.0027050 have 5 significant figures.

Q.11 How is precision related to the significant figures in a measured quantity?

Ans. More is number of significant figure,when the measuring instrument used has smaller value of its least count. The smaller the value of least count the large is value of precision. For example reading taken by screw gauge has more precision than reading taken by meter or vernier caliper.