

Types of Errors

There are mainly three types of errors:

1. **Systematic errors:** Errors with known causes and therefore can be minimised.

The main sources of systematic errors are as follows:

(i) Instrumental error

(ii) Personal error

(iii) Error due to wrong setting of apparatus in an experiment

(iv) Error due to change in external factors like figure, temperature etc. during an experiment.

2. **Random errors:** Errors for which the causes are not known precisely and can be minimised by taking multiple measurements.

The mean value of all the measured values is close to the accurate value.

3. **Gross errors:** arises due to the carelessness of the observer and hence can be minimised by taking average of all readings.

4. **Least count errors:** Least count is the smallest value that can be measured by the measuring instrument. The error associated with the resolution of the instrument is called the least count error.