ELECTRICAL MEASUREMENT & MEASURING INSTRUMENTS

Errors in measurement & its analysis, Standards

- **True Value:** True value may be defined as the average value of an infinite number of measured values when average deviation due to various contributing factor will approach to zero.
- **Measured Value: T**he approximated value of true value. It can be found out by taking means of several measured readings during an experiment, by applying suitable approximations on physical conditions.
- **Limiting Errors or Guarantee Errors: M**anufacture errors or guarantee error.
- **Relative Error or Fractional Error: R**atio of the error and the specified magnitude of the quantity

Types of Errors

- **Gross Errors:** human mistakes while reading, recording and the readings
- **Systematic Errors**

  Instrumental Errors: These errors may be due to wrong construction, calibration of the measuring instruments.

  Environmental Errors: Due to external condition includes temperature, pressure, humidity or it may include external magnetic field

  Observational Errors: As the name suggests these types of errors are due wrong observations.
- **Random Errors:** After calculating all systematic errors, it is found that there are still some errors in measurement are left.