

## **ERRORS DURING THE MEASUREMENT PROCESS**

Introduction:-

- systematic errors
- system disturbance
- Random errors

Sources of systematic errors:-

- system disturbance due to measurement
- measurements in electric circuits

Errors due to environmental inputs:-

- environment induced
- magnitude of environment input
- Wear in instrument components
- connecting leads
- reduction of systematic errors
- careful instrument design
- method of opposing inputs
- High gain feedback
- Calibration
- manual correction of output reading
- Intelligent instruments

Quantification of systematic errors:-

Random errors:-

- Mean and median values
- standard deviation and variance

Aggregation of measurement system errors:-

- Combined effect of systematic and random errors
- aggregation of errors from separate measurement system components
- error in sum, difference, product, quotient.

Total errors when combining multiple measurements