

Dynamic characteristics:

The set of criteria defined for the instruments, which are changes rapidly with time, is called 'dynamic characteristics'.

The various static characteristics are:

- i) Speed of response
- ii) Measuring lag
- iii) Fidelity
- iv) Dynamic error

Speed of response:

It is defined as the rapidity with which a measurement system responds to changes in the measured quantity.

Measuring lag:

It is the retardation or delay in the response of a measurement system to changes in the measured quantity.

The measuring lags are of two types:

1) Retardation type:

In this case the response of the measurement system begins immediately after the change in measured quantity has occurred.

2) Time delay lag:

In this case the response of the measurement system begins after a dead time after the application of the input.

Fidelity:

It is defined as the degree to which a measurement system indicates changes in the measure and quantity without dynamic error.

Dynamic error:

It is the difference between the true value of the quantity changing with time & the value indicated by the measurement system if no static error is assumed. It is also called measurement error.