SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Draw the block diagram of generalized measurement system. Explain the importance of data presentation elements and variable conversion elements.

Q.24 Define the dynamic characteristics of instruments. Write a short note on natural frequency and damping coefficient.

Q.25 Write a short note on each of the followings:-

a) Time constant

b) Drift

c) Dead time

d) Resolution

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1st Sem. / Instrumentation & Control Engg.

Subject : Fundamentals of Instrumentation Engineering

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The element which converts one form of energy to another form is known as

a) Senor

b) Transducer

c) Measurement system

d) Display device

Q.2 The degree of closeness between the true and measurement is known as

a) Accuracy b) Error

c) Precision d) Damping coefficient

Q.3 LED stands for

a) Light emitting diode

b) Liquid emitte diode

c) Light enlarging diode

d) Liquid enlarging error

Q.4 Parallax error is an example of

a) Observational error

b) Gross error

c) Instrumental error

d) environmental error

Q.5 The ratio of change in the output to the change in the input of the measurement is known as

a) Drift b) Hysteresis

c) Precision d) Sensitivity

Q.6 The device which senses the change in the physical quantity is known as

a) Transducer

b) Variable conversion element

c) LCD

d) Sensor

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Expand LCD.

Q.8 Define the term hysteresis.

Q.9 If the true value of a measurement system is 10 and the measured value is 9.5 than the value of relative error is _____.

Q.10 Define strip chart recorder.

Q.11 Define environmental error.

Q.12 Write down the methods of measurements.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Write down the elements of generalized measurement system.

Q.14 Write down any four differences between sensor and transducer.

Q.15 Write and explain the functions of instrument.

Q.16 Explain any two static characteristics of instruments.

Q.17 Define the term calibration. Write down the importance of calibration.

Q.18 Write down the needs of recorders in instrumentation system.

Q.19 Write down any four difference between LCD and LED.

Q.20 Explain systematic error and instrumental error.

Q.21 Write a short note on magnetic tape recorder.

Q.22 Write a short note on modes of operation of instruments.