18ECO133T - SENSORS AND TRANSDUCERS

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* Indicates required question

MCQ QUESTIONS

----------is 'a device that transfers power from one system to another in the same or in the different form. * 1 point

- a. Sensor
- b. Transducer
- c. Signal conditioning circuit
- d. Input signal

Which of the following criteria is not true about sensor classification? * 1 point

- a. Transduction principles using physical or chemical effects
- b. Primary input quantity, that is, the measurand
- c. Property
- d. Sensitivity

Which of the following error is caused by poor calibration of the instrument? * 1 point

- a.Random error
- b.Grosserror
- c.Systematic error
- d.Precisionerror

_____is the difference in the output of the sensor for a given input x when x reaches the value in upscale and downscale directions * 1 point

- a.Hysteresis
- b.Resolution
- c.threshold
- d.selectivity

Potentiometer transducers are used for the measurement of * 1 point

- a. Pressure
- b. Displacement
- c. Humidity
- d. Both a & b

_____ describes the performance of the sensor, which does not vary with time. * 1 point

- [x] a.Static characteristics
- [ ] b. Dynamic characteristics
- [ ] c. Environmental characteristics
- [ ] d. Reliability Characteristics

_____is defined as the smallest incremental change in the input that would produce a detectable change in the output. * 1 point

- [ ] a.sensitivity
- [x] b.Resolution
- [ ] c.Selectivity
- [ ] d.Isolation

_____is the closeness to truevalue * 1 point

- [ ] a.Zero stability
- [x] b.Accuracy
- [ ] c.Sensitivity
- [ ] d.Linearity

The desirable Static characteristic of a measuring system are : * 1 point

- a. Accuracy & Reproducibility
- b. Accuracy, Sensitivity & Reproducibility
- c. Drift & Dead zone
- d. Static Error

The term_____ is close to precision which is the difference in output y at a given value of the input x when obtained in two consecutive measurements. * 1 point

- a.repeatability
- b.amplification
- c.resolution
- d.sensitivity

There occurs a high local field in the material which may be defect-induced" which then is called * 1 point

- a. Extrinsic breakdown mechanism
- b. Intrinsic breakdown mechanism
- c. Exponential breakdown mechanism
- d. Log breakdown mechanism

Overlapping of signals between the two adjacent transducer element is called * 1 point

- a. Noise
- b. Cross talk
- c. Leakage
- d. Breakdown

Reliability function is given by ---------- * 1 point

- a. R(x) = 1 + F(x)
- b. R(x) = 1- F(x)
- c. R(x) = 1 * F(x)
- d. R(x) = 1 / F(x)

Identification of failure sensor nodes in Thermal shock test is done by -------- * 1 point

- a. Sensors are subjected to high temperature of about 125˚C for 48 hours
- b. Sensors are baked at high temperature of 250 ˚C for several hours
- c. Progressively larger voltages up to 50% in excess are applied over different intervals of time
- d. sensors are subjected to -65 ˚C and 125 ˚C for about 10 sec for every temperature

Accelerated ageing test is done by ---------- *

1 point

- a. sensors are subjected to -65 ˚C and 125 ˚C for about 10 sec for every temperature
- b. High stress is imposed on sensor – results are used to predict the performance in normal stressed condition
- c. Progressively larger voltages up to 50% in excess are applied over different intervals of time
- d. sensors are subjected to -65 ˚C and 125 ˚C for about 10 sec for every temperature

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