Reg. No. : | | | | | | | | | | |

Question Paper Code: 33063

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Instrumentation and Control Engineering

01UIC303 – SENSOR AND TRANSDUCERS

(Common to Electronics and Instrumentation Engineering)

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define measurement.
2. Define static calibration.
3. Differentiate between resolution and threshold.
4. Define Resolution.
5. List the applications of inductive transducers.
6. Define gauge factor.
7. Define magnetostriction.
8. Define Hall effect.
9. State the features of smart sensors.
10. Give some of the humidity sensing elements.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain in detail about fundamental units and standards of a measurement system. (16)

Or

(b) Discuss in detail about the types of errors. (16)

12. (a) Define the following terms: Accuracy, Precision, Hysteresis, Linearity, Range and Span. (16)

Or

(b) What do you mean by standard test inputs? Derive an expression for step response of second order transducer in under damped condition. (16)

13. (a) Explain the constructional details and principle of operation of RTD with necessary diagram. Also give its advantages and disadvantages. (16)

Or

(b) Explain in detail about the construction and principle of operation of LVDT. State its applications. (16)

14. (a) Explain how angular displacement is measured using digital transducer. (16)

Or

(b) Discuss the working principle of fiber optic transducer with its application. (16)

15. (a) With a neat block diagram, explain about the functioning of a smart sensor. (16)

Or

(b) Explain in detail about the working principle of IC temperature sensor and write its features. (16)

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