

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, MAY 2011**

EE 04 803—INSTRUMENTATION SYSTEMS

Time : Three Hours

Maximum : 100 Marks

- I. (a) Explain the transfer characteristics that should be taken into account when choosing a transducer.
- (b) Discuss the applications of Hall effect transducer.
- (c) What is meant by differential amplifier and explain its use ?
- (d) List five analog to digital conversion techniques and briefly give their principle of operation.
- (e) Explain the functioning of 5×7 LED matrix display.
- (f) Explain the working of null type recorder.
- (g) Describe the components of digital data acquisition system.
- (h) Write short notes on Frequency Division Multiplexing.

(8 × 5 = 40 marks)

- II. (a) Explain the measurement of temperature with thermocouple and discuss its advantages and disadvantages.

Or

- (b) Explain with neat sketch any *one* method for measurement of pressure.

- III. (a) Explain different types of telemetering systems.

Or

- (b) Describe with the help of suitable circuit diagram, how the following types of measurements are carried out using a digital frequency meter :—

(i) Single and multiple period measurement.

(ii) time interval measurement.

- IV. (a) Describe the following terms in the context of normal frequency distribution of data :—

(i) Mean value

(ii) Deviation.

(iii) Average deviation.

(iv) Standard deviation.

(v) Variance.

Or

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(b) Explain the theory and working of LCDs. Explain the advantages of LCDs.

V. (a) With neat block diagram, explain the analog data acquisition system.

Or

(b) Explain the digital recording system with neat sketch.

(4 × 15 = 60 marks)