Name : ....

Reg. No: ....

EIGHTH SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION, MAY 2012

EE 04 803 – INSTRUMENTATION SYSTEMS

Time : Three Hours   Maximum : 100 Marks

I (a) Describe the components of digital data acquisition system.

   (b) Explain the transfer characteristics that should be taken into account when choosing a transducer.

   (c) Explain the principle of digital data acquisition system.

   (d) Explain the principle and applications of Hall effect transducers.

   (e) List five analog to digital conversion techniques and briefly give their principle of operation.

   (f) Describe one method for phase measurement.

   (g) Write short notes on Frequency Division Multiplexing.

   (h) Describe the general characteristics of transducers.

$$(8 \times 5 = 40)$$

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

Or

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

III. (a) Derive the mathematical model and transfer function of a temperature measuring system.

Or

   (b) How instruments are classified based on their order and dynamics and frequency response?

IV. (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.

V. (a) Propose one method for Velocity and Acceleration measurement. Discuss the limitations of the schemes.

Or

   (b) Discuss the various dynamic characteristics of transducers with examples.

$$(4 \times 15 = 60)$$

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