Roll No .....

EI - 7102

B.E. VII Semester

Examination, December 2015

Data Acquisition System

Time : Three Hours *Maximum Marks : 70*

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Explain the classification of display system.
   b) Convert
      i) $(0101)_2$ to Excess - 3 code
      ii) $(0100)_2$ to Gray code
   c) Explain difference between plasma and vapour display.
   d) Explain construction and working principle of LCD with suitable diagram.

OR

Explain the working of seven segment display with appropriate circuit diagram.

Unit - II

2. a) Define chart speed.
   b) Explain any two:
      i) Impact printing ii) Electric writing
      iii) Thermal writing
   c) Explain potentiometric Recorder System.
   d) Explain Galvanometric type record er.

OR

Describe Digital Tape Recorder.

Unit - III

3. a) Define position telemetry with feedback mechanism.
   b) Explain any two of the following:
      i) Amplitude modulation
      ii) Frequency modulation
      iii) Pulse code modulation
   c) If channel bandwidth
      B = 3000, signal to Noise ratio = 1000
      Then calculate C → channel capacity in Noise.
   d) Describes telemetry with time and frequency division multiplexing.

OR

Explain various method of bandwidth and noise reduction.

Unit - IV

4. a) Define Direct Memory Access (DMA)
   b) Explain IEEE - 488 standard digital interface for data transfer.
   c) What are the various communication protocols and how they are implemented on a network? Explain.
   d) Describe error detection technique and correction technique for proper data transfer.

OR

Explain optical disk storage with proper diagram of sector division.

Unit - V

5. a) Explain Data Acquisition System (DAS).
   b) Explain the basic difference between single channel (DAS) and multichannel (DAS).
   c) Explain (SCADA) working and utility application in industries.
   d) Describe the multi-channel DAS.

OR

DAS application in microprocessor and microcontrollers with suitable diagram.

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