

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 recorder.

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  $C \rightarrow$  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.