

Code No: **R32101****R10****Set No. 1****III B.Tech II Semester Supplementary Examinations, April - 2018****DATA ACQUISITION SYSTEMS**

(Electronics and Instrumentation Engineering)

Time: 3 hours**Max. Marks: 75****Answer any FIVE Questions****All Questions carry equal marks**

- 1 a) What is Data Acquisition System? And explain the its importance in present generations with examples [7M]
b) Explain the following terms in detail [8M]
(i) Resolution (ii) Non-linearity (iii) settling time (iv) Monotonicity
- 2 a) Draw the circuit diagram of R-2R Resistor Ladder DAC and explain its operation in detail [7M]
b) An 8-bit R-2R digital-to-analog (DAC) converter has a reference of 10 volts. What is the analog output for the input code 01010110? [8M]
- 3 a) List out the different Logarithmic types of ADC? And explain any one Type along with circuit diagram. [8M]
b) Draw the circuit diagram of Dual slope integration ADC and explain its operation in detail [7M]
- 4 a) Draw the circuit diagram of Polynomial converter and explain its operation in detail [8M]
b) What is Switched capacitor NDACS? Explain its operation along with circuit diagram [7M]
- 5 a) Draw the circuit diagram of Arbitrary waveform generator of DAC and explain its operation in detail [8M]
b) List out the different applications of DAC and explain any two applications in detail [7M]
- 6 a) Explain the concept of Digital signal processing system in Digital Acquisition System along with circuit diagram [10M]
b) Write short notes on Electronic weighing machines in a ADC in detail [5M]
- 7 a) List out the different monolithic Digital to analog convertor and explain any one type in detail [8M]
b) Draw the interfacing diagram of ADC 0808 with Microprocessor and explain its operation in detail [7M]
- 8 a) Define Error? Explain the different Error sources present in ADC and DAC systems in detail [8M]
b) Write short notes on Error budget analysis of DAS in detail [7M]
