Reg. No.										

Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

FIFTH SEMESTER B.TECH (INSTRUMENTATION AND CONTROL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2015

SUBJECT: DATA ACQUISITION AND INTERFACING [ICE 309]

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ANY FIVE FULL** questions.
- Missing data may be suitably assumed.

1A.	With a neat diagram explain the performance metrics of sample and Hold circuit	**3**
1B.	What is DAS? Explain the various components of digital DAS with the block diagram.	**4**
1C.	Write a note on sample and hold stability and sample and hold accuracy	**3**
2A.	With schematic diagram, explain the working of R-2R Ladder type DAC for the digital inputs 1010 and 1110.	**4**
2B.	With its schematic explain the operation of dual slope integrating type DAC	**3**
2C.	With neat diagrams explain high level and low level multiplexers.	**3**
3A.	Discuss the role of low pass filters used in PLL	**2**
3B.	Explain the working of VCO (NE 566) with necessary diagrams and also derive the voltage to frequency conversion factor.	**5**
3C.	Explain any two applications of PLL.	**3**
4A.	With a neat diagram explain the interfacing of stepper motor with 8051	**3**
4B.	Write an ALP to generate a triangular waveform	**2**
4C.	With a neat block diagram briefly explain the DMA controller and its registers	**5**
5A.	Explain the working of microcontroller based PWM control of a dc motor	**3**
5B.	Explain the interfacing of ADC with 8051 micro controller with necessary diagram	**5**
5C.	What is synchronous, asynchronous, simplex and duplex transmission.	**2**
6A.	List and explain the errors in DAC.	**3**
6B	What is control word in 8255? Explain control word format.	**3**
6C	Discuss the interrupt sequence of programmable interrupt controller 8259.	**4**