Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

FIFTH SEMESTER B.TECH. (INSTRUMENTATION AND CONTROL ENGG.)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: DATA ACQUISITION AND INTERFACING [ICE 309]

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

1A.	Explain the basic and inverting type of sample / hold circuit with necessary diagrams.	**5**
1B.	What is low level multiplexing? Explain flying capacitor multiplexer in detail.	**5**
2A.	Describe any four specifications of DAC.	**4**
2B.	Explain any three methods of Signal conditioning in data acquisition system.	**3**
2C.	Compare flash and pipeline ADC.	**3**
3A.	With schematic and tree diagram explain the working of successive approximation ADC.	**5**
3B.	Find the output of 6 bit two stage flash ADC for an input of 6.8V with reference voltage 10V	**3**
3C.	List the advantages and disadvantages of binary weighted DAC	**2**
4A.	With necessary diagrams explain the working of R-2R DAC. What is the output voltage when the input is 0010.	**5**
4B.	Explain the working of edge triggered phase detector with necessary diagrams.	**3**
4C.	Write the control word format for 8255.	**2**
5A.	With a neat block diagram explain programmable interval timer	**5**
5B.	With a neat diagram explain any two applications of PLL.	**5**
6A.	Explain with block diagram i) Control logic and registers ii) Transmitter and receiver sections of 8251	**5**
6B.	With neat block diagram explain microcontroller based angular speed measuring instrument.	**5**