Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

FIFTH SEMESTER B.TECH. (IINSTRUMENTATION & CONTROL ENGG.)
END SEMESTER EXAMINATION DEC 2016/JAN 2017

SUBJECT: MICROPROCESSORS & MICROCONTROLLERS [ICE-305]

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

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

1A.	With neat block diagram explain the memory organization of 8051 microcontroller.	**6**
1B.	With diagram explain the microcontroller and microprocessor and justify 8051 is a microcontroller.	**4**
2A.	Explain the complete addressing modes of 8051 with an example for each.	**8**
2B.	Write an 8051 ALP to find the square root of a number.	**2**
3A.	Explain the characteristics and operation of timer mode1 and mode2 in 8051.	**6**
3B.	Write an 8051 ALP to generate a square wave using timer1, mode 1.	**4**
4A.	Explain the function of each bit in the TMOD and SCON register.	**5**
4B.	Write a program to receive the data serially and put them in p2, set baud rate as 4800, 8 data bit and 1 stop bit.	**5**
5A.	With suitable example explain the load and store instructions in ARM.	**5**
5B.	Write a program to rotate the stepper motor interfaced with LPC2148, in anticlockwise direction when key 1 is pressed.	**5**
6A.	Explain the PWM initialization steps and its operation in LPC2148.	**5**
6B.	Explain the SFRs associated with IO programming in PIC.	**5**