Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

FIFTH SEMESTER B.TECH. (INSTRUMENTATION AND CONTROL ENGG.)
END SEMESTER EXAMINATION NOV/DEC 2016

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 programming model of 8051 microcontroller.	**4**
1B.	With the timing diagram explain the external memory connection to 8051.	**6**
2A.	Explain the following instructions, i) MOVC A, @A+PC ii) MOV A, @ R1 iii) PUSH 1H iv) MOV 01H, 05Hv) SJMP $	**5**
2B.	Write an 8051 ALP to convert decimal numbers to its equivalent hexadecimal number.	**5**
3A.	Explain the characteristics of mode 0 and 1 of 8051 timers.	**6**
3B.	Write an 8051 ALP to generate a square wave with 40% ON and 60% OFF duty cycle. Use timer0, mode 1.	**4**
4A.	Explain the UART communication and significance of SBUF in 8051.	**5**
4B.	Explain the steps involved in handling 8051 interrupts.	**5**
5A.	With an example brief the GPIO programming and associated registers in LPC2148.	**5**
5B.	Write a program to rotate the DC motor interfaced with LPC2148, in anticlockwise direction when key 1 is pressed.	**5**
6A.	Explain the timer initialization steps and its operation in LPC2148.	**5**
6B.	Explain the stack operation in PIC18F with an example.	**5**