



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION - PHYSICS

SECOND SEMESTER – APRIL 2013

PH 2814 - EMBEDDED SYSTEMS

Date : 26/04/2013
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

Part – A

Answer ALL Questions:

(10x2=20)

1. Write a note on the DPTR register of μC8051 .
2. Write a note on the default stack of the microcontroller μC8051 .
3. Develop a program for μC8051 to multiply 05H and 1AH and to store the result in the internal RAM at an address 10H.
4. Develop a program segment for μC8051 to find copy the contents of R0 of bank 0 and to R0 of bank 2.
5. State the functional differences between the instructions DECF and DECFSZ of PIC.
6. Develop a program segment for PIC to input from PORTA toggle the bits and send it to PORTB 80h bytes.
7. Write a note on the RADIX assembler directive.
8. In ARM7 family, what does the acronym TDMI represent?
9. State the differences between CPSR and SPSR registers.
10. What will be the value in 'r0' after, MOV r0, 0x40, 26. Explain.

Part – B

Answer any FOUR:

(4x7.5=30)

11. With an example each, explain the various modes of addressing data in μC8051 .
12. Write notes on all the Boolean Manipulating Instructions of μC8051 .
13. List any 7 features of PIC18 series of PIC processors.
14. Write notes on all the Arithmetic and Logical instructions of PIC.
15. Develop code for ARM7 processors, to set lower order 10 bits of P0 as output and the higher order 22 bits of P0 as input. Explain the code in detail.

Part – C

Answer any FOUR:

(4x12.5=50)

16. Develop an interface and an ASM program for μC8051 to implement data acquisition using an 8 bit A/D converter.
17. With a detailed block diagram, explain the internal architecture of PIC18 series microcontroller.
18. Develop a program to generate 5 KHz in P0.2 using Timer1 in Mode 0. Assume the crystal frequency to be 11.0592 MHz.
19. With a detailed block diagram, explain the internal architecture of LPC2148 processor.
20. With an example for each, discuss the modes of addressing available in ARM state of ARM7 processors.
