LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION - **PHYSICS**

SECOND SEMESTER – **APRIL 2013**

PH 2810 - MICROPROCESSOR & MICRO CONTROLLERS

Date : 11/05/2013   Dept. No.   Max. : 100 Marks
Time : 9:00 - 12:00

Part – A

<u>Answer **ALL** Questions.</u>   (10x2=20)

1. Write a note on the control flags of μP8086.

2. Write a note on the queue of μP8088.

3. Develop a program segment for μP8086 to exchange the contents of memory locations with offsets 100h and 200h with respect to SS.

4. Write a note on 'W' and 'D' bits in the instructions of μP8086.

5. Develop a program for μP8086 to find the number of 1s in the packed BCD number in AL.

6. Write a note on the $DT/\bar{R}$ signal of μP8086.

7. Define a macro which stores in BL the square root of a number in AX.

8. State the differences between the LOOP and LOOPE instructions.

9. Write a note on the hardware interrupts of μC8051.

10. Develop a program for μC8051 to exchange the contents of R0 of Bank0 and R0 of Bank3.

Part – B

<u>Answer any **FOUR.**</u>   (4x7.5=30)

11. Discuss in detail the unconditional branch instructions of μP8086.

12. Develop an ASM86 program to convert a two digit unpacked BCD number in memory to binary format and store it in memory.

13. Develop an ASM program for μP8086 to capitalize an array of upper and lower case alphabets.

14. With a block diagram discuss bus buffering and latching in μP8086 operated in minimum mode.

15. With a neat diagram, discuss the internal architecture of μC8051.

Part – C

<u>Answer any **FOUR.**</u>   (4x12.5=50)

16. Write detailed notes on all the string manipulating instructions of μP8086.

17. DPX and DPY are 48 and 16 bit unsigned numbers. Develop an ASM program for μP8086 to find the product and store the result at DPZ. DPX, DPY and DPZ are word variables.

18. Develop an ASM program for μP8086 to sort a byte array in ascending order.

19. With a block diagram explain the functioning of the interrupt controller 8259A. Also explain how two 8259As may be cascaded to act as master and slave.   (6.5+6).

20. Eight LEDs and a switch are connected to the Ports P2 and P3 of μC8051. Develop an ASM program to make the LEDs glow in binary descending order if the switch is ON and all LEDs to blink if the switch is ON.

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