Question Paper

Exam Date & Time: 09-Jan-2019 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SCHOOL OF INFORMATION SCIENCES
FIRST SEMESTER MASTER OF ENGINEERING - ME (VLSI DESIGN) DEGREE
EXAMINATION (MAKE-UP) - JANUARY 2019

Microcontrollers and its Applications [ESD 613]

Marks: 100   **Duration: 180 mins.**

MAKEUP -JAN 2019

Answer all the questions.

1)   A. Briefly explain architecture of 8051 with suitable diagram   (10)
B. Write a short note on on-chip oscillator   (5 +5 MARKS)

2)   Briefly explain about addressing modes supported by 8051 instruction set with relevant examples   (10 MARKS)   (10)

3)   Briefly explain about Register organization model of 8051 with suitable diagram.   (10 MARKS)   (10)

4)   Explain the flag bits of following register   (10)
        a. SCON
        b.IE
        c. TCON   (

        (4 + 3 + 3
MARKS)

5)   .   Write an ASM / C program to do the following task simultaneously   (10)
      Generate square wave of 10khz on p1.5 Assume XTAL=11.0592 MHz
      Read data from P0 and transfer it serially at 9600 baud rate.
      Read data serially and store it in internal RAM location starting from 40h
  Also monitor EX0 and if activated turn off P2 pins introduce delay and turn it ON .   (10 MARKS)

6)   Explain the following Instructions of ARM 7 with relevant   (10)

example ?
     a. LDMIA R7 ! ,{ R0-R2}
     b. MLAL R0,R1,R2,R3
     c. SWI
     d. BL label   (3 + 2 + 2 + 1 MARKS)

7) Briefly explain operating modes of ARM 7 with suitable block diagram and also comment on banked registers (10)

  (7+ 3 MARKS)

8) List and explain about Registers required to configure and program on chip UART of LPC 2148 Microcontroller? (10MARKS) (10)

9) Write C program using LPC 2148 TIMER to toggle match output pin 0 for every 10ms?   (10 MARKS)   . (10)
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10) List and explain about Registers required to configure and program ADC peripheral of LPC 2148 Microcontroller?   (10 MARKS) (10)

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