

Microcontroller & Embedded Sys.

QP Code : 31152

(3 Hours)

[Total Marks: 80

N.B.: (1) Question No. 1 is compulsory.

(2) Solve any three questions out of remaining five.

(3) Figures to right indicate full marks.

(4) Assume suitable data where necessary.

1. (a) Describe the features of ARM 7 processor. 5
- (b) What is embedded systems and explain SoC in detail. 5
- (c) Compare SJMP, AJMP and LJMP instruction of 8051 microcontroller. 5
- (d) 8051 microcontroller with XTAL frequency = 11.0592 MHz, find the TH1 value needed to have the following baud rates (i) 9600 (ii) 2400 (iii) 1200 5
  
2. (a) Explain addressing modes of ARM 7 processor. 10
- (b) Explain the Timer/Counter modes of 8051 microcontroller. 10
  
3. (a) Explain in detail ARM 7 pipelining. 10
- (b) Explain various serial modes of 8051 microcontroller 10
  
4. (a) Explain priority inversion problem in Embedded system. How does it is resolved? 10
- (b) Write an assembly language program for 8051 microcontroller to arrange block of ten numbers in ascending order. 10
  
5. (a) Write an assembly language to generate square wave of 2 KHz at pin P1.1 using 8051. Assume 8051 operating frequency 12 MHz. 10
- (b) Explain CPSR register of ARM 7 processor. 10
  
6. (a) Explain detailed programmer's model of ARM 7. 10
- (b) Explain automated meter reading system in detail. 10