

(3 Hours)

[Total Marks : 80]

N.B. 1. Question No 1 is compulsory.

2. Attempt any three from the remaining five questions.

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Q1. Attempt any four from following.

(20)

- Draw and explain CPSR of ARM 7 TDMI
- Explain the concept of pipeline of ARM 7 TDMI. State its advantages and disadvantages.
- Describe TCON and TMOD SFR's in 8051.
- Interface 8 LED's with 8051. Draw detail interfacing diagram.
- Explain PSW of 8051 in detail.
- Write a program to convert Hexadecimal number into Decimal number

Q2. a) Explain and draw memory organization of 8051.

(10)

b) Explain Interrupts and exceptions of ARM 7 TDMI.

(10)

Q3. a) Assume the XTAL = 11.0592 Mhz for 8051. Write a program to generate square wave of 1 kHz  
On pin P1.3 of 8051.

(10)

b) Explain addressing modes of ARM 7 TDMI with suitable example.

(10)

Q4. a) Design 8051 based system for following specifications

(15)

- 32 KB RAM using 16 KB RAM.
- 32 KB RAM using 16 KB ROM.

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Show detail memory mapping. And draw interfacing diagram in detail.

b) Differentiate between ARM state and THUMB state.

(5)

Q5. a) Explain addressing modes of 8051 with suitable example

(10)

b) Explain in detail ARM processors operating modes.

(10)

Q6. Write a short note on any two.

(20)

- How to double the baud rate in 8051? Write a program to transfer letter "M" serially with  
The baud rate of 9600.
- Interface a 8 bit ADC with 8051. Draw detail interfacing diagram and also write program for the  
same
- Explain following instruction related to ARM 7 TDMI.
  - MVN r0, r1, LSL #2
  - CMP r5, r3
  - STMIA r9!, [r0, r1, r2]
  - TST r4, r5
  - LDR r0, [r1, r2]
- Interface a stepper motor with 8051. Draw detail diagram and also write program for the same.

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