Q. P. Code : 38355

Time : 3 hours Marks : 80

Note

a. **Q.1** is compulsory

b. Solve **any 3** questions out of the remaining questions

c. Figures to the right indicate full marks

Q.1 **Solve any 4**

a. Explain significance of Thumb mode of operation in ARM7 TDMI 5

b. Explain any 5 addressing modes of 8051 5

c. Explain following instructions in 8051

i) DA A ii) ANL A, Rn iii) INC direct iv) JNZ rel v) CJNE A, direct, rel 5

d. Write a C/assembly language program to add 10 bytes in internal RAM. 5

Assume starting location of the block is 50H.assume sum to be 8 bit.

Store the result in register R0 of bank1.

e. Explain CPSR register in ARM7TDMI 5

f. Explain TCON register in 8051 5

Q.2 a. Draw and explain interfacing of 8 bit ADC to 8051 10

b. Write a C/assembly program to transfer message “GOOD” using serial 10

communication of 8051 at 9600 baud rate .oscillator frequency is 11.0592 MHz.

Q.3 a. Interface a Hex Keypad to 8051 and explain logic for key detection 10

b. Interface following memory components to 8051 10

i) 32 KB RAM using 16KB devices

ii) 32 KB ROM using 16 KB devices.

Q.4a. Explain various operating modes of ARM7 TDMI processor. 10

b. Write a program for 8051 microcontroller to generate a square wave of 1khz 10

on port pin P1.2 using timer 1 interrupt .Assume crystal frequency of 12KHz

Q.5 a. Explain various addressing modes in ARM7 TDMI 10

b. Explain various timer modes in 8051 10

Q.6 Write short notes on any 4 20

a. Interrupts in 8051 microcontroller

b. Power saving modes in 8051

c. Interrupts/exception support in ARM7TDMI

d. SFR's in 8051

e. Memory organization in 8051 microcontroller

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