

Time : 3 hours

Marks : 80

Note

- Q.1 is compulsory
- Solve **any 3** questions out of the remaining questions
- Figures to the right indicate full marks

Q.1 Solve any 4

- Explain significance of Thumb mode of operation in ARM7 TDMI 5
- Explain any 5 addressing modes of 8051 5
- Explain following instructions in 8051
 - DA A
 - ANL A, Rn
 - INC direct
 - JNZ rel
 - CJNE A, direct, rel5
- 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.
- Explain CPSR register in ARM7TDMI 5
- 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 communication of 8051 at 9600 baud rate .oscillator frequency is 11.0592 MHz. 10

- Q.3 a. Interface a Hex Keypad to 8051 and explain logic for key detection 10
- b. Interface following memory components to 8051 10
- 32 KB RAM using 16KB devices
 - 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
