Time:-3 Hours **Marks:-80**

Note:-1. Q.1 is compulsory
2. Out of remaining 5 solve any 3
3. Figures to the right indicate full marks

Q.1 **Solve any 4**

a. Write a assembly language program to find square of a number 5
b. Explain Thumb mode of operation of ARM 7 TDMI 5
c. Explain following assembler directives ORG,DB, EQU, Public and Extern 5
d. Write a program for 8051 to subtract 2 ,16 bit numbers 5
e. Explain following instructions of 8051 µc 5
i) DA A ii) SETB bit iii) AJUMP iv) JB b v) SWAP A
f. Explain CPSR register in ARM 7 TDMI 5

Q.2 a. Draw and explain memory organization of 8051 µc 10
b. Explain interrupt structure in 8051 10

Q.3 a Explain ADC interfacing and operation in 8051 10
b. Explain the structure of port 0 and port 1 in 8051 µc with neat diagram. 10

Q.4 a. Show LCD interfacing to 8051 and program to display 'GO'. 10
b. Write an assembly language program for sending message "HI" serially 10
at 4800 baud 8 bit data,1 stop bit, continuously using 8051 .

Q.5 a. Explain various processor modes of ARM7 TDMI 10
b. Design 8051 based system with following specifications 10
i) 8 KB RAM using 4 Kb devices
ii) 8 KB EPROM using 4 Kb devices
show detailed memory map and chip select logic .Draw interfacing diagram.

Q.6 Write short notes on **any 3** 20

a. Timer modes of 8051
b. Addressing modes of ARM7 TDMI
d. Interfacing seven segment display to 8051
e. Addressing modes of 8051
