

Duration: 3hrs

[Max Marks:80]

- N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any FOUR
- a Give five points of comparison for RISC and CISC software architecture. [5]
 - b Explain T state, Instruction Cycle and Machine Cycle [5]
 - c Explain any five Data transfer instruction of 8051 micro controller [5]
 - d Describe the following SFR's [5]
 - i) IE, ii) IP, iii) SCON, iv) SBUF, v) TMOD
 - e Explain Embedded C data types in detail. [5]
- 2 a Explain Memory organization of 8051 with proper diagram. [10]
b Explain the Interrupt structure for 8051. [10]
- 3 a Write a program to transmit letter 'M' serially with a baud rate of 9600. [10]
b Explain Addressing modes of 8051 with an example [10]
- 4 a Using internal Timers write program in assembly language program to generate a square wave of 10 KHz frequency and 50% duty cycle on port p2.5. use crystal frequency of 11.0592 MHz. [10]
b Draw and explain Architecture of 8051. [10]
- 5 a Interface stepper motor with 8051 and write a program to rotate the motor Clockwise and anticlockwise. [10]
b Write a note on Low power modes of 8051. [10]
- 6 a Design 8051 based system for following specifications [10]
 - i) 32 KB ROM
 - ii) 32 KB RAMShow detail memory mapping and draw an interfacing diagram in detail
- b Interface 7-segment LED display to 8051 and write a program to display digit 0 to 9. [10]