Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 09

B.Tech.(EIE) (2011 & Onwards E-II)   (Sem.–6)
MICROCONTROLLER AND ITS APPLICATIONS
Subject Code : DE-2.4
Paper ID : [A0374]

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**
4. **Missing data, if any can be suitably assumed.**

SECTION-A

1. **Answer briefly :**

   a) Sketch the pin diagram of 8051 microcontroller.

   b) If 8051 microcontroller is operated with 12 MHz oscillator, find the execution time for ADD A, 45H and SUBB A, #55H.

   c) Add the contents of A with register Rn with or without carry.

   d) List the jump instructions of 8051.

   e) Differentiate maskable and non-maskable interrupts.

   f) What is baud rate?

   g) Explain full duplex communication link.

   h) Show the status of the CY, AC and P flag after the addition of 88H and 93H in the following instructions.

   i) State the function of RS and R/W pins of module LCD.

   j) What are the factors in selecting an ADC chip?

SECTION-B

2.   What is the difference between a microprocessor and a microcontroller?

3.   Distinguish between RISC and CISC architecture.

4.   Write a program to add the values of locations 50H and 51H and store the result in locations in 52H and 53H.

5.   Draw and explain the interfacing of 8K × 8 external program ROM with 8051.

6.   Discuss the 8051 serial communication modes.

SECTION-C

7.   Explain the addressing modes of 8051 microcontroller with examples.

8.   Explain the architecture of 8051 with suitable block diagram.

9.   Write short notes :

a) D/A converter.

b) Stepper motor control.