Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech (ECE) (Sem.–6)

MICROCONTROLLER AND EMBEDDED SYSTEM

Subject Code : EC-306

Paper ID : [A0319]

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.**

SECTION-A

1. Write briefly :

a) How many I/O ports are placed in microcontroller 8051?

b) What is the function of C/T bit in TMOD register?

c) How many bit addressable locations are placed in internal RAM of 8051?

d) How will you double the baud rate in 8051?

e) Write any four addressing modes of 8051?

f) Describe any two directives of 8051 Microcontroller.

g) What do you mean by the term embedded controllers?

h) What is RISC and CISC?

i) What is the operation carried out when 8051 executes the following instruction MOVC A, @A+DPTR?

j) What is the function of TF0 bit in TCON register?

SECTION-B

2. Explain interfacing of stepper motor with microcontroller. Write program to rotate stepper motor in clockwise direction continuously in full step mode.

3. Draw and explain interfacing diagram of ADC with 8051 microcontroller.

4. Explain jump and call instruction in 8051 with suitable examples.

5. What is the importance of stack in 8051? Explain the instructions to load and store the data in stack of 8051.

6. Explain the steps involved in designing of an embedded system with an example.

SECTION-C

7. List the interrupts available in the 8051 microcontroller. Explain interrupt enable (IE) SFR and Interrupt priority (IP) SFR.

8. Explain pin configuration with circuit diagram for all port of 8051 microcontroller.

9. What is Barrel shifter? How does it increase the speed of execution in ARM-7 processor? Explain it with neat block diagram.