

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Computer Science & Engineering/IT) (Sem.-7)

EMBEDDED SYSTEM DESIGN

Subject Code : BTEC 909C-18

M.Code : 91012

Date of Examination : 03-01-23

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 :

- Differentiate maskable and non-maskable interrupts.
- Write instructions to add the contents of A with register R_2 with and without carry.
- What is the function of ALE signal in an 8051 microcontroller?
- What are special function registers?
- What is the use of directives? List them.
- 8051 microcontroller with XTAL frequency = 11.0592 MHz, find the TH1 value needed to have the following baud rates (i) 9600 (ii) 2400.
- What is the difference between the shifts and rotate instructions?
- Discuss the use of watchdog timer.
- For a time delay of 20 ms, what value do you need to load into the timer registers? (Assume XTAL = 11.0592 MHz)
- Discuss ZIGBEE protocol briefly.

SECTION-B

2. Discuss memory organization of 8051 microcontrollers.
3. What is addressing mode? Explain the different addressing modes with suitable examples.
4. WAP to add 08 bytes of data stored at RAM memory 31H onwards and save the result at 65H onwards.
5. Draw and explain the schematic for interfacing of any analog device with 8051 microcontroller.
6. Write an 8051 C program to transfer the message “PTU” serially at 9600 baud rate continuously.

SECTION-C

7. Discuss various sources of interrupt in 8051. Also discuss various SFR's associated with interrupts.
8. Explain how Exceptions and Interrupts are handled in ARM 7?
9. With the help of a functional block diagram, explain the architecture of 8051 microcontroller.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.