CBCS SCHEME

USN | | | | | | | | | |

17MT43

Fourth Semester B.E. Degree Examination, Aug./Sept. 2020
Microcontroller

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Differentiate between RISC and CISC architecture. **(06 Marks)**

b. Differentiate between Harvard and Von-Neuwann architecture. **(06 Marks)**

c. Explain the salient feature of 8051 microcontroller. **(08 Marks)**

OR

2 a. Explain the internal memory organization of 8051 with neat diagram. **(10 Marks)**

b. Explain following pins of 8051 microcontroller
(i) ALE (ii) PSEN (iii) EA (iv) RST **(10 Marks)**

Module-2

3 a. Define Addressing Mode. Explain different addressing mode with suitable examples. **(10 Marks)**

b. Explain following instructions: (i) RLC A (ii) MOV X @ DPTR iii) MOV A, B
(iv) MOVC A, @A + PC (v) MUL A, B **(10 Marks)**

OR

4 a. Explain different ranges of Jump and call instruction with neat diagram. **(10 Marks)**

b. Explain following instructions :
(i) MOV X @DPTR, A (ii) DA A (iii) DIV AB (iv) DEC A (v) ADD A, B. **(10 Marks)**

Module-3

5 a. What are data types? Explain the different C data types for 8051 with their data size and data range. **(10 Marks)**

b. Explain format of TMOD and TCON registers. **(10 Marks)**

OR

6 a. Define time delay? What are the ways to create time delay? Discuss factors affecting accuracy of time delay. **(10 Marks)**

b. Explain Mode 1 programming and Mod 2 programming with diagrams. **(10 Marks)**

Module-4

7 a. Define Interrupt. List out the interrupts of 8051 with vector table. Also explain steps in executing in interrupt. **(10 Marks)**

b. Explain the handshake signals used in RS-232, Also mention role of MAX232 in serial communication. **(10 Marks)**

OR

8 a. Explain RS232 working with neat block diagram with handshaking signal. **(10 Marks)**

b. Explain concept of Edge Triggered and level Triggered with help of TCON. **(10 Marks)**

Module-5

9 a. Define stepper motor. Explain the working of stepper motor with neat diagram with clockwise and anticlockwise concept. **(10 Marks)**

b. Explain DAC interfacing of 8051 with suitable diagram along with an example of program. **(10 Marks)**

OR

10 a. Explain DC motor interfacing of 8051. **(10 Marks)**

b. Explain different pins of LCD. Also write an ALP to display message 'Hello' on LCD. **(10 Marks)**

* * * * *