CBCS SCHEME

USN | | | | | | | | | | |

18MT43

Fourth Semester B.E. Degree Examination, Feb./Mar. 2022
Microcontroller

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Explain the architecture of 8051 with neat diagram. **(12 Marks)**

b. Mention the difference between Microcontroller and Microprocessor with examples. **(08 Marks)**

OR

2 a. Explain the pin diagram of 8051 microcontroller with suitable diagram. **(10 Marks)**

b. Explain the following :
i) Program status word ii) Salient features of 8051 microcontroller. **(10 Marks)**

Module-2

3 a. What is Addressing Modes? Explain the different Addressing modes of 8051 microcontroller with examples. **(10 Marks)**

b. Explain the following instructions :
i) RLC A ii) DIV AB iii) SET B iv) MOV R1 , # 80h
v) XCH A , Register. **(10 Marks)**

OR

4 a. Explain the concepts of following :
i) Flags ii) Incrementing and Decrementing with examples. **(10 Marks)**

b. Explain the following instructions :
i) RLC A ii) MOV X @ DPTR , A iii) MUL AB
iv) MOV X @ DPTR v) MOV R5 , # 30H. **(10 Marks)**

Module-3

5 a. Explain the different data types in 8051 C with example. **(10 Marks)**

b. Define Data Serialization , Time delay. Discuss factors affecting the accuracy of time delay. Also mention ways to create time delay in 8051 C. **(10 Marks)**

OR

6 a. Write 8051 C program to toggle bits of P1 ports continuously with 250ms. **(06 Marks)**

b. Explain the different possible modes of Operation Timer. **(10 Marks)**

c. Mention differences between Timer and Counter. **(04 Marks)**

Module-4

7 a. Define Serial Communication. Mention the types of Serial Data Communication and explain different Communication links or transmission with figure. **(10 Marks)**

b. Explain the steps to programming 8051 to transfer data serially and receive data serially. **(10 Marks)**

OR

8 a. Define Interrupt. Explain the concept of Interrupt Enable register and Interrupt Priority register with figure. **(10 Marks)**

b. Explain the Handshake signals used in RS 232. Also mention role of MAX 232 in Serial Communication. **(10 Marks)**

Module-5

9 a. Explain how to interface DAC to 8051 microcontroller with neat diagram in reference of DAC 0808. **(10 Marks)**

b. Explain Stepper motor interfacing to 8051 microcontroller with suitable diagram in reference to Clockwise and Anticlockwise directions. **(10 Marks)**

OR

10 a. With a neat sketch and flow chart, explain how to interface keyboard to 8051 microcontroller. **(10 Marks)**

b. Define ADC and DAC. Explain how to interface ADC to 8051microcontroller, with neat sketch. **(10 Marks)**

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