

CBCS SCHEME

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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 8051 microcontroller, with neat sketch. (10 Marks)

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