

CBCS SCHEME

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15NT72

Seventh Semester B.E. Degree Examination, July/August 2021 Microcontrollers and Interface

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

1. a. With a functional block diagram, explain the architecture of 8051 microcontroller in detail. (10 Marks)
b. Differentiate between RISC and CISC CPU architecture of 8051 microcontroller. (06 Marks)
2. a. Explain the concept of Interfacing of 16K byte RAM and 32K byte of EPROM to 8051. (10 Marks)
b. Explain the concept of Von-Neuman and Harvard architecture in brief. (06 Marks)
3. a. Explain immediate, register and direct addressing modes in brief with examples. (10 Marks)
b. Write short notes on long addressing and bit direct addressing modes. (06 Marks)
4. a. Explain Bit inherent, Indexed and absolute addressing modes in brief with examples. (08 Marks)
b. Write short notes on subroutines and data types of 8051 microcontroller. (08 Marks)
5. a. Explain the arithmetic Instructions in brief along with sub classified ADD and SUB group of instructions with examples. (08 Marks)
b. Explain the logical instructions in brief along with subclassified AND & OR instructions with examples. (08 Marks)
6. a. Write short notes on subroutine CALL of RET instructions as well as bit manipulation Instructions. (08 Marks)
b. Write an ALP program to start A/D conversion and store the results in registers. (08 Marks)
7. a. Mention the types of oscillators and explain two types of oscillators of microcontrollers PIC16F84 in detail. (08 Marks)
b. Define Interrupt and explain the working of INTCON Register with neat schematic. (08 Marks)
8. a. Discussing about arithmetic and logical instructions of PIC16CXX microcontroller family with examples. (08 Marks)
b. Explain about P1c microcontroller and describe the specifications of microcontroller PIC16F84. (08 Marks)
9. a. Explain the concept of general purpose register in the AVR involving data type of 8-bit AVR microcontroller. (08 Marks)
b. With a neat block diagram, explain the concept of AVR data memory and its classification within the data memory. (08 Marks)
10. a. Explain LDS and STS instructions under Instructions with data memory in brief. (08 Marks)
b. Explain the concept of AVR Status register with neat schematic in brief. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.