

CBCS SCHEME

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18EC35

Third Semester B.E. Degree Examination, June/July 2023 Computer Organization and Architecture

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain with a neat diagram, the basic Operational concept of a Computer. (08 Marks)
b. Explain how to measure the performance of a Computer. (06 Marks)
c. Write a note on Types of Computers. (06 Marks)

OR

- 2 a. Explain IEEE standard for Floating point number. (08 Marks)
b. Explain the methods to improve the performance of Computer. (08 Marks)
c. Write a note on Processor clock. (04 Marks)

Module-2

- 3 a. What is an Addressing Mode? Explain any four addressing mode with an example. (10 Marks)
b. With an example, explain the concept of BIG – ENDIAN and LITTLE – ENDIAN Assignment of Memory Storage. (10 Marks)

OR

- 4 a. Explain the concept of Stacks and Queues. (08 Marks)
b. What are Assembler directives? Explain the various assembler directives with examples. (08 Marks)
c. With an example, explain Shift and Rotate Instructions. (04 Marks)

Module-3

- 5 a. Define Interrupt. Explain Daisy chain and Priority Structure methods of handling interrupts from multiple devices. (10 Marks)
b. With a neat diagram, explain DMA Controller Operation with its Interface Registers. (10 Marks)

OR

- 6 a. Define Exceptions. Explain the different types of Exceptions. (06 Marks)
b. Explain the Tree structure of USB with Split bus operation. (06 Marks)
c. With a neat diagram, explain Centralized and distributed bus arbitration schemes. (08 Marks)

Module-4

- 7 a. Define Cache Memory. Explain various types with neat diagram. (08 Marks)
b. Write a note on Classification of a Memory Structure. (04 Marks)
c. Define the following terms :
i) Memory Latency ii) Memory Bandwidth
iii) Memory Access time iv) Memory Cycle time. (08 Marks)

OR

1 of 2

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.

- 8 a. Explain with block diagram, the Operation of SD RAM. (10 Marks)
b. Define ROM Point out and explain various types of ROM's. (10 Marks)

Module-5

- 9 a. Explain with neat diagram, Single Bus Organisation of data path inside a processor. (10 Marks)
b. What are the actions required to execute a Complete Instruction Add(R3), R1? (10 Marks)

OR

- 10 a. Explain Hardwired Control Unit Organisation. (10 Marks)
b. Explain Multiple bus / three bus Organization, with a neat diagram. (10 Marks)
