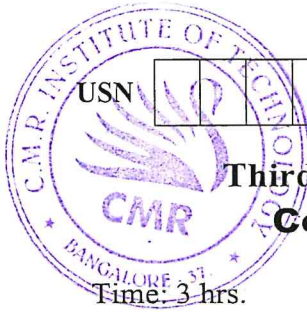


CBCS SCHEME



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18EC35

Third Semester B.E. Degree Examination, Feb./Mar. 2022 Computer Organization and Architecture

Max. Marks: 100

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

Module-1

- 1 a. Explain the basic operational concept between the processor and memory with neat block diagram. (08 Marks)
- b. Explain the various parameters affecting the performance of a computer and also provide the basic performance equation. (08 Marks)
- c. Write a short note on single bus structure with neat diagram. (04 Marks)

OR

- 2 a. List out and explain the three systems used for representing signed numbers and also brief about the modular number system concept. (08 Marks)
- b. Explain IEEE standard used for single and double precision floating point number representation with examples. (08 Marks)
- c. Write a short note on Big-endian and little-endian assignment. (04 Marks)

Module-2

- 3 a. What is addressing mode? Explain any four addressing modes with examples. (08 Marks)
- b. What are assembler directives? Explain about the various directives used in the program with example. (08 Marks)
- c. Write a short note on the assembly and execution of programs. (04 Marks)

OR

- 4 a. With neat diagram and program example, explain a simple I/O task between processor, keyboard and display. (10 Marks)
- b. What is subroutine? Illustrate the subroutine function with parameter passing by value and reference with suitable program. (10 Marks)

Module-3

- 5 a. Explain the concept of memory mapped I/O with neat diagram of I/O interface with program example. (10 Marks)
- b. Write short notes on: (i) Interrupt hardware (ii) Interrupt nesting (10 Marks)

OR

- 6 a. What is an interrupt? Explain about various implementation techniques of interrupt. (10 Marks)
- b. Explain how simultaneous interrupt request is handled using the concept of Daisy Chain. (10 Marks)

Module-4

- 7 a. Explain the internal organization of memory chips with example. (08 Marks)
- b. Explain the internal organization of $2M \times 8$ DRAM chip with neat diagram. (08 Marks)
- c. Write a short note on ROM. (04 Marks)

OR

- 8 a. Discuss about the use of cache memory in the processor system. (08 Marks)
- b. What is virtual memory? Explain its organization with neat diagram. (08 Marks)
- c. Write a short note on magnetic hard disk. (04 Marks)

Module-5

- 9 a. Explain single-bus organization of the data path inside a processor with neat diagram. (10 Marks)
- b. Explain the process of fetching a data word from memory using respective registers of a processor with neat diagram. (10 Marks)

OR

- 10 a. Explain the control signal generation required for proper sequence of instructions in the processor. (10 Marks)
- b. What is microprogrammed control? Explain its basic organization with suitable diagram and example. (10 Marks)

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