



CBCS SCHEME

21CS34

Third Semester B.E. Degree Examination, June/July 2023 Computer Organisation 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. Describe basic operation concepts behind working of computers. (10 Marks)
b. Write a short notes on : (10 Marks)
i) Basic Performance Equation ii) Clock Rate

OR

- 2 a. Describe the concept of Branching with an example program of instruction execution. (10 Marks)
b. Describe various addressing mode with examples. (10 Marks)

Module-2

- 3 a. Explain the interfacing of I/O device with computer. (10 Marks)
b. Describe the concept of Interrupt in computer. (10 Marks)

OR

- 4 a. Explain the Direct Memory Access Technique and its importance. (10 Marks)
b. Explain with neat timing diagram of an input transfer on a synchronous bus. (10 Marks)

Module-3

- 5 a. Explain basic concepts involved for memory structure of computers. (10 Marks)
b. What are various semiconductor memories? Explain in detail the working of Read/Write operation of SRAM. (10 Marks)

OR

- 6 a. Describe the parameters – speed, size and cost with respect to memory. (10 Marks)
b. What is a virtual memory? Explain its role. (10 Marks)

Module-4

- 7 a. Explain how a fast adder is designed. (10 Marks)
b. Multiply the following number 13×12 . Also draw the multiplier circuit. (10 Marks)

OR

- 8 a. Explain complete execution step for instruction ADD (R3), R1 (10 Marks)
b. Describe the hardwired computer with an example. (10 Marks)

Module-5

- 9 a. Explain the parallel processing concept with a block diagram showing multiple functional units. (10 Marks)
b. Explain pipelining technique with an example. (10 Marks)

OR

- 10 a. What is instruction pipeline? Explain four segment instruction pipeline concept. (10 Marks)
b. Explain the concept of vector processing. Write few of its application areas. (10 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.

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