



--	--	--	--	--	--	--	--

## Sixth Semester B.E. Degree Examination, June/July 2024 Advanced Computer 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 the components of Modern Computer System. (10 Marks)
- b. Explain the Flynn's classification. (10 Marks)

**OR**

- 2 a. Explain the Architecture of Vector Super Computer. (10 Marks)
- b. Explain the Relation of Amdahl's law. (06 Marks)
- c. Suppose  $80 \times$  Speed up from 100 processor, what fraction of original program can be sequential? (04 Marks)

### Module-2

- 3 a. Explain the RISC Architecture with Hardware control unit. (08 Marks)
- b. Explain the VLIW Architecture. (08 Marks)
- c. Differentiate between RISC and CISC. (04 Marks)

**OR**

- 4 a. Explain the Virtual Memory Technology. (10 Marks)
- b. Explain the Paging with TLB. (05 Marks)
- c. Explain the memory capacity. (05 Marks)

### Module-3

- 5 a. Explain the Synchronizing Timing Protocol. (08 Marks)
- b. Explain Back plan Bus Specification. (07 Marks)
- c. Differentiate between Interrupt Mechanism and Transaction. (05 Marks)

**OR**

- 6 a. Explain the Cache Memory Organization. (08 Marks)
- b. Explain with neat diagram about Set Associative Mapping. (08 Marks)
- c. Write a Short-Note on Full-Associative Mapping. (04 Marks)

### Module-4

- 7 a. Explain the schematic of a typical Multistage Interconnection Network. (10 Marks)
- b. Differentiate between Microprocessor and Multi computer. (05 Marks)
- c. Write a short note on Hierarchical Bus system. (05 Marks)

**OR**

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 briefly about Cache Coherence problem. (08 Marks)  
b. Explain briefly about Snoopy Bus Protocol. (07 Marks)  
c. Differentiate between Write Invalidate and Write Update. (05 Marks)

**Module-5**

- 9 a. Explain the structure of Tomasulo's Algorithm. (10 Marks)  
b. Write a short note on Branch prediction and Dynamic prediction. (10 Marks)

**OR**

- 10 a. Explain briefly about message passing model. (10 Marks)  
b. Explain briefly IPC using shared variable. (10 Marks)

\* \* \* \* \*