

BT-6/M-23

46167

ADVANCED COMPUTER ARCHITECTURE

Paper-PE-CS-S302A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

UNIT-I

1. (a) Explain multilevel hierarchical framework with a neat diagram.
(b) Explore the relationship between programming languages and parallel architectures. (7+8=15)

2. (a) Explain the architecture of VLIW processors and its pipeline operation.
(b) Elaborate the level of parallelism in program execution on modern computers. (7+8=15)

UNIT-II

3. (a) Discuss the main tasks of super scalar processing. Also compare VLIW with super scalar processors.
(b) What are different approaches to branch handling? (7+8=15)

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4. (a) What are the Instruction issue policies of the superscalar processor?
(b) Explain the performance effects of branch penalty. How can we reduce branch penalties? (7+8=15)

UNIT-III

5. (a) Compare bandwidths of locked, pended and split transaction buses.
(b) Explain systolic array and its applications. (7+8=15)
6. (a) Write a brief note on distributed and shared memory architectures.
(b) Explain multistage networks with proper functionality. (7+8=15)

UNIT-IV

7. (a) Explore working process of virtual memory in computer architecture.
(b) Discuss memory hierarchy with the help of suitable diagram. (7+8=15)
8. (a) What is cache coherence problem?
(b) Discuss snoopy cache protocol by taking proper example. (7+8=15)
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