### 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 8

- 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)