

Code No: **R32052**

**R10**

**Set No. 1**

**III B.Tech II Semester Supplementary Examinations, April/May- 2019**

**COMPUTER ARCHITECTURE**

(Computer Science and Engineering)

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions  
All Questions carry equal marks**

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- 1 a) Discuss in detail about the elements of a modern computer system in the context of parallel processing. [8M]  
b) Discuss in detail about different operational model available in SIMD computers. [7M]
- 2 a) Explain the Optimization of Cache Performance. [8M]  
b) Explain the Memory hierarchy in detail with a block diagram. [7M]
- 3 a) Discuss the Characteristics of typical CISC Architecture. [8M]  
b) Describe the architectural model of a basic scalar computer system. [7M]
- 4 Discuss the following: [5M]  
i) possible hazards in an instruction pipeline [5M]  
ii) need of reservation table in a pipeline [5M]  
iii) dynamic instruction scheduling
- 5 a) Explain Cray Y-MP 816 System Organization in detail. [7M]  
b) Discuss the following: [8M]  
i) Crossbar Switch and Multiport Memory ii) Hot-Spot Problem
- 6 a) Discuss in detail about Cache Coherence problem. [8M]  
b) List and Explain different Multicast Routing Algorithms. [7M]
- 7 a) Describe the shared memory models for constructing SIMD supercomputers. [7M]  
b) Write short notes on: [8M]  
i) Control Processors and Processing Nodes ii) Interprocessor Communications
- 8 a) Differentiate Instruction Level Parallelism with Structural Parallelism. [8M]  
b) Explain parallel processing techniques used in Cray Line of computer systems. [7M]

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