

**Code No: C0502, C5802, C4002****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY- 2012****COMPUTER SYSTEM DESIGN****(COMMON TO COMPUTER SCIENCE, COMPUTER SCIENCE AND ENGINEERING,  
INFORMATION TECHNOLOGY)****Time: 3hours****Max. Marks: 60****Answer any five questions  
All questions carry equal marks**

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- 1.a) Write the three differences between Von-newmann architecture and Harvard architecture.
- b) Explain the data transfer procedure handled in DMA.
- 2.a) Differentiate between the micro program control unit and hardwired control unit.
- b) Briefly describe how instruction level parallelism takes place using pipelining technique with examples.
- 3.a) Illustrate the LRU page replacement policy with example.
- b) Describe the direct mapping method in cache memory organization.
- 4.a) Define process and thread. Write the structure and usage of process control block.
- b) Explain the deadlock detection algorithm.
- 5.a) Describe the structure of files in Unix operating systems.
- b) Distinguish between the threats and intruders.
- 6.a) List the arithmetic and logic instructions and its function in Pentium architectures.
- b) What are data hazards? Explain any two types of data hazards with examples.
- 7.a) Explain the concepts of virtual memory.
- b) Describe the inter process communication using semaphores.
8. Write short notes on:
  - a) Interrupt service routines
  - b) CISC and RISC processors.

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