**Code No: C0502, C5802, C4002** **R09**

**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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