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Code No: A0606**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.Tech I Semester Examinations March/April-2011****ADVANCED COMPUTER ARCHITECTURE****(DIGITAL SYSTEMS AND COMPUTER ELECTRONICS)****Time: 3hours****Max.Marks:60**

Answer any five questions
All questions carry equal marks

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- 1.a) What are the technology trends in the design of a computer? How do you evaluate the performance? What are the parameters of evaluation?
- b) List out various instructions for flow control and the supporting addressing modes? [12]
- 2.a) Define and discuss Andahl's Law?
- b) Discuss various addressing modes and their relative frequencies? [12]
- 3.a) Explain the limitations of ILP
- b) With a simple example explain static branch prediction? [12]
- 4.a) Discuss the use of compiler in achieving ILP? What are the issues involved and how to over come them?
- b) What is the use of virtual memory? Explain virtual memory mapping with a neat diagram? [12]
- 5.a) Explain cache coherence? Discuss the basic schemes?
- b) How do you encode an instruction? What is the difference between RISC and CISC instruction template? [12]
- 6.a) With a neat block diagram explain how I/O devices are interfaced to CPU – memory?
- b) Discuss virtual memory protection methods with examples? [12]
- 7.a) Discuss the concept of RAID and explain various levels and their applicability.
- b) Explain how to integrate hardware support at compile time? [12]
8. Explain the following
 - i) Synchronization in large scale multiprocessors
 - ii) Design issues of clusters. [12]

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