LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

FIRST SEMESTER – APRIL 2010

CS 1814 - ADVANCED COMPUTER ARCHITECTURE

Date & Time: 29/04/2010 / 1:00 - 4:00   Dept. No.   Max. : 100 Marks

PART – A

Answer ALL the questions   **10 x 2 = 20 marks**

1. With an example, Give LITTLE ENDIAN format.
2. State Moore's Law.
3. What is Register Direct Addressing mode?
4. Name any two processors that use super scalar architecture.
5. List out any two advantages of virtual memory.
6. Give the formula for calculating CPU time in a miss oriented approach.
7. Define - Synchronization.
8. Specify the importance of I/O interfaces in a Computer system.
9. What are the four types of execution unit in IA-64 architecture?
10. What is chaining?

PART – B

Answer ALL the questions   **5 x 8 = 40 marks**

11. a) With block diagram, briefly explain Von Neumann Architecture. (OR)
    b) Briefly Explain Stack architecture.

12. a) Briefly explain the characteristics of CISC architecture (OR)
    b) Explain briefly about RISC processors.

13. a) How to reduce misses by compiler optimizations? (OR)
    b) Explain briefly any two methods to reduce miss penalty.

14. a) Briefly compare Interrupt Driven I/O and Programmed I/O design. (OR)
    b) Draw & explain Thread handling mechanism.

15. a) With neat diagrams, explain IBM 570 architecture (OR)
    b) Briefly explain – Explicitly-Parallel Instruction Computer architecture.

PART – C

Answer ANY TWO questions ONLY   **2 x 20 = 40 marks**

16. a) Explain in detail about Instruction Set Architecture (ISA)architecture. (10 Marks)
    b). Explain how to avoid structural hazards. (10 Marks)

17. a). State and explain any four methods to improve cache performance. (10 Marks)
    b) Explain any two types of mapping functions. (10 Marks)

18. a) Explain in detail about DMA. (10 Marks)
    b) With neat diagrams, describe the architecture for MIMD. (10 Marks)

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