

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

FIRST SEMESTER – NOVEMBER 2009

CS 1814 - ADVANCED COMPUTER ARCHITECTURE

Date & Time: 11/11/2009 / 1:00 - 4:00 Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the questions

10 x 2 = 20 marks

1. Draw the block diagram of a Computer System.
2. Write an assembly level program to add two 8 bit numbers.
3. State different stages of MIPS pipeline.
4. Specify any two advantages of Super Scalar Architecture.
5. What is 'Write through' & 'Write back'?
6. Notify disadvantage of Set Associative Cache.
7. Define I/O Latency & I/O bandwidth.
8. What is the factor must be considered in designing I/O Subsystem?
9. List out the principal difference between VLIW & EPIC.
10. What is interlocking?

PART – B

Answer ALL the questions

5 x 8 = 40 marks

11. a) With neat diagrams, explain Harvard architecture (OR)
b) Discuss any two methods to evaluate the performance of a Computer System.
12. a) Briefly explain RISC architecture. (OR)
b) What is Data Hazard? Propose a new architectural design to eliminate Data Hazard.
13. a) With a suitable example, explain Segmentation. (OR)
b) With neat diagrams, explain Two Way Set Associative Cache.
14. a) Illustrate the design of Interrupt driven I/O interface. (OR)
b) Briefly explain DMA.
15. a) Explain Vector processor Architecture. (OR)
b) How SIMD processors are differ from MIMD processors? Explain.

PART – C

Answer ANY TWO questions only

2x 20 = 40 marks

16. Compare & Differentiate elaborately all the four different views of a Computer System. (20 Marks)
17. a) Explain any four addressing modes with suitable example. (10 Marks)
b) Discuss the design criteria that affect virtual memory system design (10 Marks)
18. a) Explain the importance of I/O interfaces design with respect to performance. (10 Marks)
b) How Hyper-thread mechanism helps to design parallel systems? Explain (10 Marks)
