

ANNA UNIVERSITY COIMBATORE

B.E. / B.Tech. DEGREE EXAMINATIONS – DECEMBER 2008

THIRD SEMESTER - CSE / IT

CS303 - COMPUTER ARCHITECTURE

Time: Three Hours

Maximum: 100 Marks

PART A – (20 x 2 = 40 Marks)

Answer ALL Questions

- 1 What is meant by Computer Architecture?
- 2 Define Bus.
- 3 Explain briefly about Instruction Register.
- 4 What is the use of stack?
- 5 Give overflow conditions for addition and subtraction.
- 6 What is meant by carry-look ahead addition?
- 7 Mention the four basic phases of the algorithm for addition and subtraction.
- 8 What is the IEEE standard for floating point numbers?
- 9 List out the various addressing techniques.
- 10 Give the various sub cycles included in the instruction cycle.
- 11 Define Control word.
- 12 What are the three types of hazards in pipelining?
- 13 Give short notes on cache memory.
- 14 Write the types of ROM?
- 15 Expand RAID
- 16 Define virtual memory.
- 17 What is the use of DMA?
- 18 Define interrupt.
- 19 Define PCI, SCSI.
- 20 Write the objective of USB.

PART B (5 x 12=60 Marks)

Answer Any FIVE Questions

21. (i) What is carry save adder? Describe with example. (6)  
(ii) Describe the organization of stack. (6)
22. Describe the non restoring division algorithm and simulate the same for the unsigned numbers A = 1011 and B = 0101. (12)
23. (i) Explain the principle of operation of a Booth multiplier with an example. (8)  
(ii) Explain the IEEE standards for floating point number representation. (4)
24. (i) What is meant by Dynamic Branch prediction? Describe the operation of a 2 stage dynamic branch predictor. (6)  
(ii) Write notes on types of instruction formats. (6)
25. What is Virtual memory? Explain how the logical address is translated into physical address in the virtual memory system with a neat diagram. (12)
26. Describe the various mapping techniques used in cache memories. (12)
27. What is DMA controller? How it is useful in a computer system? Explain in detail (12)
28. (i) Explain in detail the functions of SCSI with a neat diagram. (10)  
(ii) What is TLB? How is it useful? (2)

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