

Code No: RR310201

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III B.Tech I Semester(RR) Supplementary Examinations, May 2011

COMPUTER ORGANIZATION

(Common to Electrical & Electronics Engineering, Electronics & Instrumentation Engineering, Electronics & Communications Engineering and Instrumentation & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define PCI. Explain the applications of PCI
(b) Describe any ten mandatory PCI signals. [8+8]
2. (a) Find the output binary number after performing the arithmetic operation using 1's complement representation.
i. $111.01 + 10.111$
ii. $110.11 - 111.01$
(b) Explain steps involved in the addition of numbers using 2's complement notation. [10+6]
3. (a) Discuss various aspects of instruction set design.
(b) Explain about various types of data on which machine instructions operate. [10+6]
4. (a) List and describe all arithmetic instructions of MIPS R-Series processors
(b) Discuss how R3000 pipeline can be modified to improve performance [8+8]
5. (a) What is block hit ratio?
(b) Explain major variables on which hit ratio depends.
(c) Discuss about FIFO replacement with two different memory capacities. Give suitable example [3+3+10]
6. (a) What is multiple-platter disk.
(b) Differentiate between fixed and movable head disks.
(c) Define 'disk access time', 'seek time' and 'rotational latency'. [5+5+6]
7. (a) Differentiate between micro programmed and hard wired control units with merits and demerits of each.
(b) Discuss about the design considerations of micro instruction sequencing technique. [8+8]
8. (a) Why special handling is required for branch instruction in a pipelined processor. Explain with examples.
(b) How would you determine the number of pipeline stages in a pipelined processor [10+6]
