

A1B
16/12/13 FN

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 31296

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Seventh Semester

Electrical and Electronics Engineering

CS 2071/CS 608/10133 EEE 24 – COMPUTER ARCHITECTURE

(Common to Electronics and Instrumentation Engineering and Instrumentation and Control Engineering)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How CPU execution time is calculated?
2. Mention the use of assembler directive.
3. Convert (10110101) 2's complement to decimal and find its negative representation.
4. Convert (167FA)₁₆ to octal and decimal.
5. What is the purpose of pipelining?
6. Write microinstruction format for MicroMIPS.
7. Differentiate DRAM Vs SRAM.
8. List various cache memory design parameters.
9. Why the user must be isolated from details of IO operations?
10. List the advantages of threads.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain about instruction format of MiniMIPS and various instructions with example. (8)
- (ii) Explain about various addressing modes in MiniMIPS with example. (8)

Or

- (b) (i) Write a program to find maximum value in a list of integers. Explain it. (5)
- (ii) Write a macro to find largest of three values. Explain it. (4)
- (iii) Explain pseudo instructions. (4)
- (iv) Write down the benefits and drawbacks of complex instruction. (3)
12. (a) (i) Explain full adder and ripple carry adder. (8)
- (ii) Explain multifunction ALU in detail. (8)
- Or
- (b) (i) Explain floating point adder. (8)
- (ii) Explain floating point instructions with example. (8)
13. (a) (i) Discuss about Instruction Execution unit. (8)
- (ii) Explain single cycle and multicycle data path in MicroMIPS. (8)
- Or
- (b) Discuss about pipeline and its performance limits. (16)
14. (a) (i) Explain about SRAM and DRAM. (8)
- (ii) Discuss about RAID. (8)
- Or
- (b) (i) Explain about cache memory . (8)
- (ii) Discuss about virtual memory. (8)
15. (a) (i) Explain DMA. (8)
- (ii) Explain about demand based I/O interrupts. (8)
- Or
- (b) (i) Discuss about nested interrupts. (8)
- (ii) Discuss about multithreads. (8)