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Question Paper Code : 33311

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

Sixth Semester

Electronics and Communication Engineering

CS 1251/CS 1202 A/070230011 — COMPUTER ARCHITECTURE

(Common to Fourth Semester Computer Science and Engineering and Information Technology)

(Regulation 2004/2007)

(Common to B.E. (Part-Time) Third Semester Computer Science and Engineering and Fifth Semester Electronics and Communication Engineering, Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the registers used for communication between CPU and memory?
2. What is the function of assembler?
3. What is meant by carry save addition?
4. Distinguish between restoring and non-restoring division algorithms.
5. What is Hazard? List out different types of hazard.
6. Differentiate Hardwired control and Micro programmed control.
7. Define Virtual memory.
8. Differentiate between static and dynamic RAM.
9. Compare between memory mapped I/O and I/O mapped I/O.
10. What is an interrupt? State its significance.

PART B — (5 × 16 = 80 marks)

11. (a) With necessary example explain the different types of addressing modes. (16)

Or

- (b) (i) Draw the basic functional unit of computer and explain each unit. (8)
- (ii) Write short notes on Stack and queues. (8)
12. (a) With a suitable diagram explain the 4 bit carry look-ahead adder and derive its output equation. (16)

Or

- (b) With a necessary diagram explain the concept of Booth algorithm for multiplication of signed 2's complement numbers. (16)
13. (a) What do you mean by pipelining technique? With necessary diagrams explain the basic concepts of pipelining. (16)

Or

- (b) With the help of a block diagram explain the concept of micro instruction-sequencing organization explain how the control signals are generated. (16)
14. (a) (i) Draw the block diagram of memory hierarchy and describe the features and functions of each memory in terms of speed, size, and cost. (10)
- (ii) Write short notes on high speed, non-volatile memory. (6)

Or

- (b) With necessary block diagram explain the virtual memory address translation concepts. (16)
15. (a) What is the use of DMA controller? Explain the function of DMA controller with necessary diagram. (16)

Or

- (b) Describe in detail about standard I/O interfaces with necessary diagram. (16)