Code No. 2382 / N

FACULTY OF ENGINEERING

B.E. 3/4 (ECE) II-Semester (New)(Main)Examination, May 2013

Subject : Computer Organization and Architecture

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. Draw the flow chart for add and subtract operations.
2. Differentiate between restoring and non-restoring division algorithm.
3. What is stored program organization?
4. What is Instruction set completeness?
5. Write the need for different addressing modes.
6. Write features of RISC.
7. Mention the ways that computer buses can be used to communicate with memory and I/O.
8. Draw the flow chart for source initiate transfer using handshaking.
9. How CAM is different from read / write memory?
10. Define address space and memory space.

PART – B (50 Marks)

11. Explain Booth's multiplication algorithm for signed 2's complement numbers in details, with a suitable example and give the hard ware requirement.

12. (a) Explain the common bus system of a computers with a neat sketch.
    (b) Explain input-output configuration of a computer and list any five I/O instructions with their control functions and micro operations.

13. (a) Explain instruction formats for various types of computer organizations as single accumulator, general register and stack.
    (b) Explain various types of interrupts in brief.

14. Explain the following nodes of transfer in brief :
    (i)Interrupt - initiated I/O
    (ii) DMA
    (iii) Explain the methods employed for establishing priority for simultaneous interrupts.

15. (a) Draw the block diagram of an association memory and explain its operation in terms of match logic, read and write operations.
    (b) Mention various page replacement algorithms.

16. (a) Explain pipeline conflicts and discuss the remedies for those conflicts.
    (b) Explain any four data manipulation instruction.

17. Write short notes on the following:
    (a) CPU-IOP communication
    (b) Microprogram sequencer
    (c) Floating point arithmetic (addition and multiplication)

*****