Total No. of Questions—12] [Total No. of Printed Pages—3

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S.E. (Computer Engineering) (II Sem.) EXAMINATION, 2010

COMPUTER ORGANIZATION

(2003 COURSE)

Time : Three Hours **Maximum Marks : 100**

N.B. :— Answer *three* questions from Section–I and *three* questions from Section II.

SECTION I

1. (*a*) Draw the hardware implementation of Booth's Algorithm and explain the same. [10]

   (*b*) Draw and explain the flow-chart for floating point saturation. [8]

Or

2. (*a*) Perform the following division using restoring and non-restoring division algorithm.

   Dividend = 1100

   Divisor = 0011 [10]

   (*b*) What do you mean by a floating point number ? Draw and explain IEEE single and double precision floating point number formats. [8]

3. (*a*) Write a control sequence for the execution of the instruction ADD (Rs), R_1. [8]

   (*b*) Explain in detail horizontal and vertical organization of microinstructions. [8]

P.T.O.

Or

4. (*a*) Draw a neat diagram of single bus organization of CPU showing ALU, all types of registers and the data paths among them. [8]

(*b*) What are different design methods of Horizontal Control Units ? Explain any *one*. [8]

5. (*a*) Explain the register architecture of 68000 processor. [8]

(*b*) Explain instruction pipelining and instruction cycle. [8]

Or

6. (*a*) Explain the instruction the pipeline of pentium processor. [8]

(*b*) State and explain in detail of Data Hazards in instruction pipelining. [8]

SECTION II

7. (*a*) What is a cache memory ? Explain, how a memory address is mapped into a memory address using set associative mapped cache. The main memory is 64 k words. The cache memory has 4096 word with block size of 128 words. [10]

(*b*) Explain in detail.

(*i*) RAID

(*ii*) Optical memory [8]

Or

8. (*a*) What are the different page replacement Algorithm ? Explain [10]

(*b*) What is virtual memory concept ? Explain the role of TLB in virtual memory organization. [8]

9. (*a*) Explain the synchronous bus in an output operation with timing dia. [8]

(*b*) Write short notes on :

(*i*) Scanner

(*ii*) Ink jet printer [8]

Or

10. (*a*) Draw and explain in detail typical DMA block diagram. [8]

(*b*) Explain PCI bus with diagram. [8]

11. (*a*) Explain closely coupled system with the help of diagram. [8]

(*b*) Write a short note on Super Scalar Architecture. [4]

(*c*) Explain the features of Power PC. [4]

Or

12. (*a*) List out different features of RISC processor. [6]

(*b*) Explain the working of IEEE 488 bus. [4]

(*c*) Write short notes on co-processor. [6]