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

COMPUTER ORGANIZATION

(2008 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 and explain Von Neumann Architecture. [4]

(*b*) Draw the hardware implementation of Booth's Algorithm and explain the same. [8]

(*c*) Draw the flow chart for floating point addition and explain. [6]

Or

2. (*a*) Perform the following divisions using restoring algorithm :

(*i*) Dividend = 1001

(*ii*) Divisor = 0101. [8]

(*b*) Represent the following numbers in single precision floating point format :

(*i*) 101.25

(*ii*) 41.625. [6]

(*c*) What is the use of guard bit ? List the alternative methods of rounding the results of floating-point operations. [4]

P.T.O.

3. (*a*) Draw and explain CPU Architecture of Intel processor. [8]

(*b*) Discuss in detail register organization of intel processor. [8]

Or

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

(*b*) List and explain different Addressing modes of pentium processor [8]

5. (*a*) What are the different design methods for Hardwired control units ? Explain any *one*. [8]

(*b*) Write control sequence for an unconditional branch instruction. [8]

Or

6. (*a*) Draw and explain single bus organization of the CPU. [8]

(*b*) With the help of circuit diagram, explain, how Z_{in} and end signals are generated. [8]

SECTION II

7. (*a*) What is virtual memory concept ? Explain the role of TLB in Virtual memory organization. [10]

(*b*) Explain the following :

(*i*) RAID

(*ii*) Magnetic memory. [8]

Or

8. (*a*) A block set-Associative Cache consists of 64 blocks divided into 4 block sets. The main memory contains 4096 blocks, each consisting of 128 words of 16-bit length :

(*i*) How many bits are there in main memory ?

(*ii*) How many bits are there in each of the TAG, SET and word field ? [10]

(*b*) State and explain different page replacement Algorithm ? [8]

9. (*a*) What is DMA ? Explain with a block diagram in detail. [8]

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

Or

10. (*a*) What is an operating system ? Explain in detail. [4]

(*b*) List and briefly define the major types of OS scheduling. [4]

(*c*) Write short notes on :

(*i*) touch screen panel

(*ii*) Memory management [8]

11. (*a*) Explain in detail super scalar Architecture. [6]

(*b*) Explain symmetric multiprocessor organization. [6]

(*c*) Write short note on vector computation. [4]

Or

12. (*a*) Write shot notes on power PC. [6]

(*b*) Compare RISC *Versus* CISC. [6]

(*c*) Explain benefits of Clustering. [4]