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Examination: Even Semester Examination 2023

Paper Name: Computer Organization and Architecture

Paper Code: BTCSE-402-Lateral

Time: 3 Hours

Maximum Marks: 75

Section A

Note: Attempt All the Questions

(7x5=35)

Q.No.	Question	Marks	CO	BL
1.	Draw and explain the function block diagram of a computer	5	CO2	BL1
2.	Explain the fixed point and floating-point representation	5	CO1	BL2
3.	Compare the architecture for RISC and CISC paradigms.	5	CO1	BL4
4.	What is the instruction format of computer architecture?	5	CO3	BL1
5.	Consider a 4-way set associative mapped cache with a block size of 4 KB. The size of the main memory is 16 GB and there are 10 bits in the tag. Find- a) Size of cache memory b) Tag directory size	5	CO4	BL1
6.	Explain the memory hierarchy in detail	5	CO3	BL3
7.	Explain the ALU design in detail.	5	CO1	BL2

Section B

Note: Attempt any four (4) Questions

(4x10=40)

Q.No.	Question	Marks	CO	BL
1.	Explain the addressing mode in computer architecture in detail	10	CO2	BL2
2.	Explain the Booths multiplication algorithms.	10	CO1	BL2
3.	Consider a pipeline having 4 phases with duration 60, 50, 90 and 80 ns. Given latch delay is 10 ns. Calculate- a) Pipeline cycle time	10	CO3	BL2

	b) Non-pipeline execution time c) Speed up ratio d) Pipeline time for 1000 tasks e) Sequential time for 1000 tasks			
4.	Explain any one computer architecture module used for complex instructions set computers.	10	CO4	BL4
5.	An address space represents 64 bits and a memory space is 32 bits. a) What is the total size of the physical address? b) How many blocks will be represented by 32 bits c) What is the total size of memory the 64 address bits? each memory block size of 32 bit	10	CO3	BL1
6.	Write a short note on any two of the following: a. RAM and ROM b. Associate memory c. DMA d. Parallel processor	5x2=10	CO2	BL2