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SHAMBHUNATH INSTITUTE OF ENGINEERING AND TECHNOLOGY

Subject Code: BCS-302 **Subject:COMPUTER ORGNAIZATION & ARCHITECTURE**

Course: B.Tech. **SEMESTER: IVth**

SECOND SESSIONAL EXAMINATION, ODD SEMESTER, (2023-2024)

Branch: COMPUTER SCIENCE & ENGINEERING

Time – 2Hr **Maximum Marks – 45**

NOTE: (Attempt ALL Questions)

1. Attempt any FIVE questions in brief.

Q N	QUESTION	Marks	CO	BL
a.	Write about Program Control	2	CO3	L2
b.	Write the differences between RISC and CISC.	2	CO3	L2
c.	Explain the term cycle Stealing.	2	CO3	L3
d.	Write about pipelining.	2	CO3	L3
e.	Define Vertical microprogramming.	2	CO3	L3
f.	Write Instruction Types.	2	CO3	L4

2. Attempt Any ONE of the following.

QN	QUESTION	Marks	CO	BL
a.	Explain different steps of an instruction execution.	5	CO3	L3
b.	Write about Micro instruction and Microcode.	5	CO3	L3
c.	Discuss the different modes of data transfer.	5	CO3	L4

3. Attempt Any FIVE of the following.

QN	QUESTION	Marks	CO	BL
a.	Define Cache Memory.	2	CO4	L3
b.	Write about Auxiliary Memory	2	CO4	L3
c.	Write Different types of ROM	2	CO4	L4
d.	Explain Optical disks.	2	CO4	L4

e.	What is SRAM and DRAM?	2	CO4	L3
f.	Write the hierarchy of memory.	2	CO4	L4

. Attempt Any ONE of the following.

QN	QUESTION	Marks	CO	BL
a.	What do you mean by locality of reference? Explain with suitable example.	5	CO4	L4
b.	Differentiate between hardwired and micro programmed control unit.	5	CO4	L4
c.	A computer has a 4K word cache organized in block set associative manner with 4 blocks per set, 64 words per blocks. The main memory contains 65536 blocks. How many bits are there in each of the Tag, block/set and word fields?	5	CO4	L5

. Attempt Any FIVE of the following.

QN	QUESTION	Marks	CO	BL
a.	What is the role of ISR in Interrupt driven I/O method?	2	CO5	L4
b.	Define DMA.	2	CO5	L3
c.	Define I/O Ports.	2	CO5	L4
d.	What are the role of I/O Channels?	2	CO5	L4
e	Define Hardware Interrupt.	2	CO5	L4
f.	Write, two differences between Synchronous & Asynchronous Communication.	2	CO5	L4

. Attempt Any ONE of the following.

QN	QUESTION	Marks	CO	BL
a.	Explain the connection between I/O bus and I/O devices.	5	CO5	L4
b.	Calculate the page fault for a given string with the help of LRU & FIFO page replacement algorithm, Size of frames = 4 and string 1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6	5	CO5	L5
c.	What do you mean by asynchronous data transfer? Explain strobe control and hand shaking mechanism.	5	CO5	L4