SET 1

SR 22

St. Peter's Engineering College (Autonomous) Dullapally (P), Medchal, Hyderabad – 500100. II - Mid Term Examination – November 2024						Dept.	:	CSM, CSC, CSD
						Academic Year 2024-25		
Subject Code	:	AS22-05PC06	**Subject**	:	**COMPUTER ORGANIZATION AND ARCHITECTURE**			
Class/Section	:	**B. Tech.**	**Year**	:	**II**	**Semester**	:	**I**
Duration	:	120 Min	**Max. Marks**	:	**30**	**Date:**	:	

BLOOMS LEVEL					
Remember	**L1**	**Understand**	**L2**	**Apply**	**L3**
Analyze	**L4**	**Evaluate**	**L5**	**Create**	**L6**

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PART – A (10x1M = 10M)

Note: Answer all Questions. Each Question carries equal marks.

Q. No	Question (s)	Marks	BL	CO
	UNIT - III			
1	**a.** Find the 1's complement of the following eight-digit binary number i) 10101110 ii) 10000001	**1M**	L2	C213.5
	b. Explain why the sign of the remainder after a division should be the same as the sign of the dividend.	**1M**	L2	C213.5
	UNIT – IV			
	c. Define Priority Interrupt	**1M**	L1	C213.3
	d. Name the different modes of data transfer	**1M**	L1	C213.3
	e. Draw the memory hierarchy in a computer system	**1M**	L1	C213.3
	f. Write 2 operational differences between RAM and ROM	**1M**	L1	C213.3
	UNIT – V			
	g. Define LRU and FIFO	**1M**	L1	C213.4
	h. What do you mean by synchronous bus and asynchronous bus?	**1M**	L1	C213.4
	i. Discuss the difference between tightly coupled and loosely coupled multiprocessors	**1M**	L2	C213.4
	j. What is a hardware lock?	**1M**	L1	C213.4

PART – B (20M)

Q. No	Question (s)	Marks	BL	CO
	UNIT - III			
2	**a.** Explain BCD Adder.	**4M**	L2	C213.5
	OR			

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3	**b.** State the addition algorithm.	**4M**	L3	C213.5
	UNIT – IV			
4	**a.** Explain Source initiated handshaking with the required timing diagram	**4M**	L1	C213.3
	b. What is programmed I/O? Discuss the data transfer from an I/O device through an interface into the CPU.	**4M**	L1	C213.3
	OR			
5	**a.** Explain Auxiliary Memory.	**4M**	L2	C213.3
	b. Explain the cache memory mapping techniques	**4M**	L2	C213.3
	UNIT – V			
6	**a.** Explain three major pipeline conflicts.	**4M**	L1	C213.4
	b. Discuss the arithmetic pipeline with a numerical example		L2	C213.4
	OR			
7	**a.** Give any three dynamic arbitration algorithms.	**4M**	L2	C213.4
	b. Explain Mutual Exclusion with a Semaphore	**4M**	L2	C213.4

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