O.P.Code: 25MC9102	R25	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

MCA I Year I Semester Regular Examinations December-2025
COMPUTER ORGANIZATION & ARCHITECTURE

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12** = **60** Marks)

		UNIT-I			
1		What is bus structure? Explain the types of buses with examples.	CO1	L1	12M
		OR			
2	a	Explain different addressing modes with examples.	CO1	L2	6 M
	b	Develop an 8086 program to add two 16-bit numbers.	CO1	L6	6 M
		UNIT-II			
3	a	Write two differences between integer division and floating-point division.	CO2	L3	6 M
	b	Differentiate between hardwired control and microprogrammed control with advantages and disadvantages.	CO2	L2	6 M
		OR			
4		Describe floating-point representation. What is the role of mantissa and exponent?	CO2	L2	12 M
		UNIT-III			
5	a	Discuss the relationship between speed, size, and cost of memory.	CO3	L2	6 M
	b	Write short notes on: (i) Page fault (ii) Hit ratio.	CO3	L3	6 M
		OR			
6		Explain the concept of virtual memory with a neat diagram. How is address translation done?	CO3	L2	12 M
		UNIT-IV			
7		Discuss various types of buses in detail. Explain bus arbitration methods.	CO4	L2	12 M
		OR			
8	a	Distinguish between synchronous and asynchronous data transfer with examples.	CO4	L2	6 M
	b	List three types of data transfer methods between CPU and I/O devices. Briefly describe each.	CO4	L1	6 M
		UNIT-V			
9	a	What is an interconnection network in multiprocessors?	CO5	L3	6 M
	b	Describe the structure of a general-purpose multiprocessor.	CO6	L2	6 M
		OR			
10		Classify in detail the different types of interconnection networks. Compare their performance.	CO6	L4	12 M

*** END ***