BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)
II - B. Tech II-Semester Supplementary Examinations (BR23), Aug - 2025
DIGITAL LOGIC & COMPUTER ORGANIZATION (AIML)

Time: 3 hours   Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the question in Part-A and Part-B

	PART–A (10X2 = 20M)	Marks	CO	BL
1. a)	Convert the following numbers with the given radix to decimal. i) $(143)_4$ ii) $(1199)_8$	(2M)	CO1	BL3
b)	Give truth tables of XOR and NOR logic gates?	(2M)	CO1	BL1
c)	Differentiate Combinational and Sequential circuits?	(2M)	CO2	BL2
d)	What is the functionality of a Bus in computer system?	(2M)	CO2	BL3
e)	What is an instruction cycle?	(2M)	CO3	BL1
f)	Give an example of signed addition and subtraction?	(2M)	CO3	BL2
g)	What is memory hierarchy?	(2M)	CO4	BL1
h)	Define Cache memory?	(2M)	CO4	BL3
i)	Explain the functionality of DMA?	(2M)	CO5	BL2
j)	Define Interrupt and give example?	(2M)	CO5	BL2

PART–B (5X10 = 50M)

		Marks	CO	BL
2a.	Convert the following numbers with the given radix to decimal. i) $(21.95)_8$ ii) $(4433)_5$ iii) $(1199)_{12}$ iv) $(12.195)_7$ v) $(ABCD)_{16}$	10(M)	CO1	BL3
	(OR)			
3a.	Design a 3 bit full adder? Explain its functionality in detail	10(M)	CO1	BL3
4a.	What is a shift register? Explain the modes of operations in a four bit shift register?	10(M)	CO2	BL2
	(OR)			
5a.	Discuss the computer bus system. Discuss the basic computer instructions.	10(M)	CO2	BL3
6a.	Explain the flow chart of addition and subtraction of two binary numbers	10(M)	CO3	BL3
	(OR)			
7a.	Explain Microprogrammed control in detail with a neat diagram?	10(M)	CO3	BL2
8a.	Discuss about the virtual memory with a neat diagram and explain TLB	10(M)	CO4	BL3
	(OR)			
9a.	Discuss the concept of Cache memory?	10(M)	CO4	BL3
10a	With a neat diagram discuss the concept of Direct memory access?	10(M)	CO5	BL3
	(OR)			
11a	Differentiate between Memory Mapped I/O and Isolated I/O.	10(M)	CO5	BL3

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