

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
III B. Tech I Semester Regular/Supplementary Examinations, April/May -2025
COMPUTER ARCHITECTURE AND ORGANIZATION
(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

		<u>UNIT-I</u>	
1.	a)	Explain the basic components of a digital computer and their functions.	[7M]
	b)	Describe the different types of instruction formats.	[7M]
		(OR)	
2.	a)	Define an interrupt. Explain the interrupt handling process.	[7M]
	b)	Explain different types of instruction cycle.	[7M]
		<u>UNIT-II</u>	
3.	a)	Explain the concept of micro-operations and microinstructions.	[7M]
	b)	Describe the function of the arithmetic logic shift unit.	[7M]
		(OR)	
4.	a)	Explain the organization of a hardwired control unit.	[7M]
	b)	Define addressing mode. Discuss different types of addressing modes.	[7M]
		<u>UNIT-III</u>	
5.	a)	Write a short note on Flynn's taxonomy of parallel computer architectures.	[7M]
	b)	Describe the organization of general-purpose registers.	[7M]
		(OR)	
6.	a)	Explain the concept of pipelining and its advantages	[7M]
	b)	Discuss the characteristics of a RISC instruction set.	[7M]
		<u>UNIT-IV</u>	
7.	a)	Explain Direct Memory Access (DMA) and its advantages.	[7M]
	b)	Describe different modes of data transfer.	[7M]
		(OR)	
8.	a)	Explain synchronous and asynchronous data transfer.	[7M]
	b)	Write a short note on input/output processors.	[7M]
		<u>UNIT-V</u>	
9.	a)	Explain the concept of memory hierarchy.	[10M]
	b)	Define cache memory. Explain different cache mapping techniques.	[4M]
		(OR)	
10.	a)	Discuss the characteristics of auxiliary memory.	[7M]
	b)	Explain the difference between main memory and secondary memory.	[7M]
