Code No: R2032041 **R20** SET -1

III B. Tech II Semester Supplementary Examinations, December -2023
MICRO PROCESSORS AND MICRO CONTROLLERS
(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
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UNIT-I

1.	a)	Draw the minimum mode pin diagram and explain the function of each pin in detail.	[7M]
	b)	Explain the differences between CISC and RISC architecture.	[7M]
		(OR)	
2.	a)	Explain the control and conditional flags of 8086 with flag register.	[7M]
	b)	Discuss the bus interfacing unit and execution unit of 8086 architecture.	[7M]
		UNIT-II	
3.	a)	Develop an assembly language program to find the sum of numbers from 1 to 100.	[7M]
	b)	Describe the arithmetic and logical instructions of 8086.	[7M]
		(OR)	
4.	a)	Explain machine language instruction formats of 8086.	[7M]
	b)	Explain any six assembler directives used in 8086 microprocessor.	[7M]
		UNIT-III	
5.	a)	Explain the need of DMA. Discuss in detail about DMA data transfer method.	[7M]
	b)	Explain different modes of operation of 8255 Programmable Peripheral I/O.	[7M]
		(OR)	
6.	a)	Discuss the interfacing of stepper motor with 8086 along with figure and ALP.	[7M]
	b)	Describe the 8251 USART architecture and interfacing with 8086.	[7M]
		UNIT-IV	
7.	a)	Describe the addressing modes in 8051 microcontroller.	[7M]
	b)	Explain the interfacing of Traffic light control with 8051 controller.	[7M]
		(OR)	
8.	a)	Write an assembly language program using 8051 microcontroller instructions to generate a square wave at port 1, pin 0 (i.e., P 1.0). The frequency of the generated square wave is to be 1 kHz.	[7M]
	b)	Discuss the register set and instruction set of 8051 microcontroller.	[7M]
		UNIT-V	
9.	a)	Explain ARM Cortex-M Series Family in detail.	[7M]
	b)	Explain Nested Vectored Interrupt Controller functional description and programmers' model.	[7M]
		(OR)	
10.	a)	Draw the architecture of ARM controller and explain the operation of each block in it.	[7M]
	b)	Discuss the Stack structure and Stack pointer.	[7M]