Course Code: 23EE6T11

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

III-B.Tech II-Semester Regular Examinations (BR23), April/May - 2026

MICROPROCESSORS AND MICROCONTROLLERS (EEE)

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)	Define a microprocessor and list any two applications.	(2M)	CO1	BL1
b)	What are the main features of the 8086 microprocessor?	(2M)	CO1	BL1
c)	What is meant by general bus operation in 8086?	(2M)	CO2	BL2
d)	What is the purpose of control signals in 8086 interfacing?	(2M)	CO2	BL2
e)	List the three modes of operation of 8255.	(2M)	CO3	BL1
f)	What is DMA (Direct Memory Access)?	(2M)	CO3	BL1
g)	What is serial communication in 8051?	(2M)	CO4	BL2
h)	What are timers and counters in 8051?	(2M)	CO4	BL2
i)	Write the main features of PIC18 microcontroller.	(2M)	CO5	BL1
j)	What are I/O ports in PIC microcontrollers?	(2M)	CO5	BL1

PART–B (5X10 = 50M)

2a.	Explain the architecture of the 8086 microprocessor with a neat block diagram.	10(M)	CO1	BL2
	(OR)			
3a.	Explain the register organization of the 8086 microprocessor and their functions.	5(M)	CO1	BL2
b.	Describe the architectural advancements of 80386 microprocessor, Intel 80486 microprocessor and Intel Pentium processor.	5(M)	CO1	BL2

4a.	Explain the instruction set of the 8086 microprocessor with examples.	5(M)	CO2	BL2
b.	Describe any 5 addressing modes of the 8086 microprocessor with suitable examples.	5(M)	CO2	BL2
	(OR)			
5a.	Explain the minimum mode operations of the 8086 microprocessor.	5(M)	CO2	BL2
b.	Explain the read and write cycle timing diagrams of the 8086 microprocessor	5(M)	CO2	BL2

6a.	Explain the architecture and modes of operation of 8255 Programmable Peripheral Interface.	10(M)	CO3	BL2
	(OR)			
7a.	Explain the interfacing of A/D and D/A converters with the 8086 microprocessor.	10 (M)	CO3	BL2

8a.	Explain the architecture of the 8051 microcontroller with a neat block diagram.	10(M)	CO4	BL2
	(OR)			
9a.	Explain the timers, counters, and interrupts of the 8051 microcontroller.	5(M)	CO4	BL2
b.	Explain the serial communication and I/O port interfacing in the 8051 microcontroller	5(M)	CO4	BL2
10a.	Explain the block diagram and architecture of the Microchip PIC18 microcontroller.	10(M)	CO5	BL2
	(OR)			
11a.	Explain data types and logical operations in C programming for the Microchip PIC18 microcontroller.	5(M)	CO5	BL2
b.	Write a C program for I/O programming and data conversion using the Microchip PIC18 microcontroller.	5(M)	CO5	BL3

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