PVP 20

Code: 20EE3602

III B.Tech - II Semester – Regular Examinations – JUNE 2023

MICROPROCESSORS AND MICROCONTROLLERS
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Sketch and Demonstrate the architecture of 8086 microprocessor.	L3	CO2	7 M
	b)	Sketch the timing diagram of a read cycle in 8086 microprocessor.	L3	CO2	7 M
OR					
2	a)	Differentiate between minimum and maximum mode of operation of 8086 microprocessor.	L3	CO2	7 M
	b)	Demonstrate the register organization of 8086 microprocessor.	L3	CO2	7 M
UNIT-II					
3	a)	Demonstrate the conditional and unconditional branch instructions of 8086 microprocessor with an example for each type.	L3	CO2	7 M

	b)	Develop an 8086 assembly language program to find the smallest among 'N' numbers, where the value of N should be stored in 2000H and the array of elements from 2001H. Store the result in 2100H.	L3	CO3	7 M
OR					
4	a)	Demonstrate the arithmetic and logical instructions of 8086 microprocessor with an example for each type.	L3	CO2	7 M
	b)	Develop an 8086 assembly language program to find the given number is positive or negative. If the result is positive, store 00H in 4000H, else FFH in 4000H.	L3	CO3	7 M
UNIT-III					
5	a)	Illustrate the architecture of 8255 PPI.	L4	CO4	7 M
	b)	Illustrate the general organization of a one channel DMA controller.	L4	CO4	7 M
OR					
6	a)	Illustrate the block diagram of 8259 programmable interrupt controller.	L4	CO4	7 M
	b)	Analyze the various signals of 8251 USART with neat pin diagram.	L4	CO4	7 M
UNIT-IV					
7	a)	Explain the features of 8051 microcontroller.	L2	CO1	7 M
	b)	Produce at least two modes of operation of timer in 8051 microcontroller.	L3	CO2	7 M

OR					
8	a)	Discuss the PSW register of 8051 microcontroller.	L2	CO1	7 M
	b)	Interpret any three addressing modes of 8051 microcontroller with examples.	L3	CO2	7 M
UNIT-V					
9	a)	Develop an 8051 assembly language program to perform 8-bit subtraction operation and store the result in memory location 50H.	L3	CO3	7 M
	b)	Analyze in detail with a neat schematic about 8051 based analog-to-digital conversion.	L4	CO4	7 M
OR					
10	a)	Develop an 8051 assembly language program to perform 8-bit multiplication operation and store the results in memory location 70H and 71H.	L3	CO3	7 M
	b)	Analyze in detail with a neat schematic about interfacing of 8051 with four LEDs.	L4	CO4	7 M