

Code: 20EC3403

**II B.Tech - II Semester – Regular / Supplementary Examinations
MAY - 2023**

**MICROPROCESSOR & MICROCONTROLLERS
(ELECTRONICS & COMMUNICATION 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)	Explain Princeton and Harvard architectures used in processors in detail.	L2	CO1	7 M
	b)	Outline the evolution of 4 bit to 32 bit microcontrollers.	L2	CO2	7 M
OR					
2	a)	Explain in detail about CISC and RISC systems.	L2	CO1	7 M
	b)	Explain Memory Latency, Cache Memory and its significance in computer design.	L3	CO2	7 M
UNIT-II					
3	a)	What is an addressing mode? Explain various addressing modes of 8086 along with examples.	L3	CO2	7 M
	b)	Explain how the pipelined architecture is implemented in 8086.	L3	CO2	7 M

OR					
4	a)	Explain the maximum mode pins of 8086 microprocessor.	L2	CO2	7 M
	b)	Sketch read and write timing diagrams in minimum mode configuration of 8086 microprocessor.	L3	CO2	7 M
UNIT-III					
5	a)	Describe the Registers and its functionality of MSP430 microcontroller.	L2	CO2	7 M
	b)	Make use of Low Power applications in MSP430 microcontroller.	L3	CO3	7 M
OR					
6	a)	Identify the practices for Low-Power Consumption with an example.	L3	CO3	7 M
	b)	Illustrate the memory map of MSP430 microcontroller.	L3	CO3	7 M
UNIT-IV					
7	a)	Illustrate the Watch Dog Timer interrupt of MSP430 microcontroller.	L3	CO4	7 M
	b)	Interface LCD with MSP430 microcontroller.	L3	CO4	7 M
OR					
8	a)	Make use of Timers in MSP430 microcontroller.	L3	CO4	7 M
	b)	Explain the DMA Control Interrupts and DMA Registers in MSP430 microcontroller.	L3	CO4	7 M

UNIT-V

9	a)	Analyze Arithmetic Instructions in MSP430 microcontroller with examples.	L4	CO5	7 M
	b)	Outline the differences between Single Operand Core Instructions and Double Operand Core Instructions with relevant examples.	L4	CO5	7 M
OR					
10	a)	Test various Data Instructions in MSP430 microcontroller.	L4	CO5	7 M
	b)	Interpret the use of Shift and Rotate Operations and Decimal Arithmetic in MSP430 microcontroller with suitable examples.	L3	CO5	7 M