Code No.: R22EC501PC	R22	H.T.No.			8	R					

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B. TECH–I–Semester End Examinations (Supply) - June- 2025
MICROPROCESSORS & MICROCONTROLLERS
(ECE)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks.

PART-A **(10 Marks)**

1.	a)	What is the function of the segment registers in 8086 architecture?	[1M]
	b)	Briefly explain the role of interrupts in 8086.	[1M]
	c)	What are the addressing modes of the 8051 microcontroller?	[1M]
	d)	How is a timer interrupt programmed in the 8051?	[1M]
	e)	Define the purpose of ADC and DAC in interfacing with the 8051.	[1M]
	f)	Explain the RS232 communication interface.	[1M]
	g)	Describe the Pipeline mechanism in an ARM processor.	[1M]
	h)	What is the significance of the Program Status Register in ARM?	[1M]
	i)	Highlight the key features of the Cortex processor architecture.	[1M]
	j)	How is the OMAP processor used in real-time systems?	[1M]

PART-B **(50 Marks)**

2.	Explain the functional diagram of the 8086 architecture in detail.	[10M]
	OR	
3.	Write an assembly language program in 8086 to sort an array of numbers.	[10M]
4.	Explain the architecture and memory organization of the 8051 microcontroller.	[10M]
	OR	
5.	Describe how serial communication is implemented in the 8051.	[10M]
6.	Discuss the interfacing of an LCD and keyboard with the 8051 microcontroller.	[10M]
	OR	
7.	Explain the SPI bus interface with reference to the 8051 microcontroller.	[10M]
8.	Discuss on the ARM instruction set with examples for data processing.	[10M]
	OR	
9.	Describe the conditional execution mechanism in ARM.	[10M]
10.	Compare and contrast the Cortex and OMAP processors with respect to their architecture.	[10M]
	OR	
11.	Discuss the applications of advanced ARM processors (Cortex and OMAP) in embedded systems.	[10M]

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