

## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-GURUJADA VIZINAGARAM

## III B. Tech I Semester Regular Examinations November -2025

## MICROPROCESSOR AND MICROCONTROLLERS

## (ECE)

Time: 3 hours

Max. Marks: 70

The Question paper consists of Part A &amp; Part B.

Part A is compulsory, Answer all questions. Part B Answers any one question from each unit.

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1		PART-A	(20Marks)
	a)	Define (i) microcomputer (ii) addressing mode	[2]
	b)	Define about the purpose of using RAM and ROM ?	[2]
	c)	What are the functions of data transfer instruction set of 8086 microprocessor ?	[2]
	d)	What is meant by assembler directives of 8086 microprocessor ?	[2]
	e)	What is meant by Macro ? What are the advantages of Macro ?	[2]
	f)	Define the stack structure of 8086 microprocessor ?	[2]
	g)	Distinguish between microprocessor and microcontroller ?	[2]
	h)	Define UART ? What is the importance of UART ?	[2]
	i)	What are the merits of Sensor when connected to 8051 microcontroller ?	[2]
	j)	What are the advantages of DAC when connected to 8051 microcontroller ?	[2]
		PART-B	(50Marks)
		Question from <b>Unit - I</b>	
2	a)	Explain about the memory segmentation carried out in 8086 microprocessor ?	[5]
	b)	Describe about the various types of addressing modes which will lie in 8086 microprocessor ?	[5]
		(OR)	
3	a)	What is the concept of pipeline ? Explain with a neat sketch	[5]
	b)	Explain the concept of semiconductor memories ?	[5]
		Question from <b>Unit - II</b>	
4	a)	Explain about the following data transfer instruction set of 8086 microprocessor: i. MOV ii. PUSH iii.XCHG iv. OUT v. LEA	[5]
	b)	Describe about the arithmetic instruction set of 8086 microprocessor i. AAA ii. SBB iii. CMP iv. DAS v. IMUL	[5]
		(OR)	
5	a)	Explain the assembler directives in 8086 microprocessor: i. DQ ii. DUP (0) iii. END iv. EQU v. Segment_name SEGMENT & Segment_name ENDS	[5]

	b)	Describe about the logical instructions and string instructions in 8086 microprocessor: i. AND ii. TEST iii. REPNE iv. REPE v. CMPSW	[5]
		Question from <b>Unit - III</b>	
6	a)	How to interface the 8255 programmable peripheral interface with 8086 microprocessor with a neat sketch ?	[5]
	b)	Explain about the minimum mode of operation of 8086 microprocessor ?	[5]
		(OR)	
7	a)	Explain about the stack structure related to 8086 microprocessor ?	[5]
	b)	How can we interface static RAM with 8086 microprocessor ? Explain it with a neat sketch ?	[5]
		Question from <b>Unit - IV</b>	
8	a)	Describe about the instruction set of 8051 microcontroller with different addressing modes: i. MOV ii. XCH iii. XRL iv. ORL v. CPL	[5]
	b)	Explain about the branch related instructions of 8051 microcontroller ?	[5]
		(OR)	
9	a)	Explain about the 8051 microcontrollers in detail ?	[5]
	b)	Describe about the branch related instructions of 8051 microcontroller ?	[5]
		Question from <b>Unit - V</b>	
10	a)	Describe the interfacing of matrix keyboard with 8051 microcontroller with a neat sketch ?	[5]
	b)	Explain about steps required for the interfacing of Stepper motor with 8051 microcontroller with a neat diagram	[5]
		(OR)	
11	a)	Explain the interfacing of temperature sensor LM 35 with 8051 microcontroller ?	[5]
	b)	What are the steps followed for interfacing of DAC 0808 with 8051 microcontroller ? Explain it with a neat sketch	[5]

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