

MICROPROCESSOR & MICROCONTROLLER (Th. 03)

Date of Commencement of classes: 14.03.2022

Date of Closing of classes: 11.06.2022

LIST OF WEEK/ MONTH WISE AVAILABLE DAYS/ PERIODS

Sl. No.	Month	Week-wise no. of academic days available					Total no. of academic days
		Week- 1	Week- 2	Week- 3	Week- 4	Week- 5	
1	March	--	--	4	6	3	13
2	April	2	5	4	4	6	21
3	May	5	4	4	5	2	20
4	June	3	6	--	--	--	09
Total		10	15	12	15	11	63

NO. OF AVAILABLE CLASSES PER WEEK/ MONTH

Sl. No.	Month	Week-wise no. of academic periods available					Total no. of academic periods
		Week- 1	Week- 2	Week- 3	Week- 4	Week- 5	
1	March	--	--	4	6	3	13
2	April	2	5	4	4	6	21
3	May	5	4	4	5	2	20
4	June	3	6	--	--	--	09
Total		10	15	12	15	11	63

UNIT-WISE DISTRIBUTION OF PERIODS

SL. NO.	UNIT	Topics	Periods as per Syllabus	Periods actually needed	Expected marks Chapter wise
1	01	Microprocessor(Architecture and Programming-8 bit-8085)	15	09	20
2	02	Instruction Set and Assembly Language Programming(8 bit)	15	12	15
3	03	TIMING DIAGRAMS	08	06	20
4	04	Microprocessor Based System Development Aids	10	11	15
5	05	Microprocessor (Architecture and Programming- 16 bit-8086)	12	10	15
6	06	Microcontroller (Architecture and Programming-8bit)	15	13	15
TOTAL			75	61	100

Sign of Lect.

Sign of HOD

Sign of AIC

Sign of Vice Principal

LESSON PLAN

Name of the Month	Week No.	Class day	Art. No.	Theory Topics	
M A R C H	3 rd	1 st	1.1	UNIT-1 Microprocessor (Architecture and Programming-8 bit-8085) Introduction to Microprocessor and Microcomputer & distinguish between them.	
		2 nd	1.2	Concept of Address bus, data bus, control bus & System Bus	
		3 rd	1.3	General Bus structure Block diagram.	
		4 th	1.4	Basic Architecture of 8085 (8 bit) Microprocessor	
	1 st	Cont...			
	4 th	2 nd	1.5	Signal Description (Pin diagram) of 8085 Microprocessor	
		3 rd	1.6	Register Organizations, Distinguish between SPR & GPR, Timing & Control Module,	
		4 th	1.7	Stack, Stack pointer & Stack top.	
		5 th	1.8	Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)	
		6 th	2.1	UNIT-2 Instruction Set and Assembly Language Programming Addressing data & Differentiate between one-byte, two-byte & three-byte instructions with examples.	
		5 th	1 st	2.2	Addressing modes in instructions with suitable examples.
	2 nd		2.3	Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control)	
	3 rd		2.4	Simple Assembly Language Programming of 8085- 2.4.1-Simple Addition & Subtraction	
	1 st	1 st		2.4.2-Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits	
		2 nd		2.4.3-Counters & Time delay (Single Register, register Pair, More than Two Register)	
1 st		2.4.4-Looping, Counting & Indexing (Call/JMP etc.).			
2 nd		2.4.5-Stack & Subroutines programs.			
3 rd		2.4.6-Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer.			
4 th		2.4.7-Compare between two numbers			
5 th		2.4.8-Array Handling (Largest number & smallest number in the array)			
2 nd		1 st		2.5	Memory & I/O Addressing
	3 rd	2 nd		3.1	UNIT- 3.0 Timing diagrams Define opcode, operand, T-State, Fetch cycle, Machine Cycle,

		3 rd		Instruction cycle & discuss the concept of timing diagram.	
		4 th	3.2	Draw timing diagram for memory read, memory write, machine cycle.	
	4 th	1 st			Draw timing diagram for I/O read, I/O write machine cycle.
		2 nd	3.3	Draw a neat sketch for the timing diagram for 8085 instruction (MOV instruction).	
		3 rd		Draw a neat sketch for the timing diagram for 8085 instruction (MVI, LDA instruction).	
		4 th	4.1	UNIT- 4.0 Microprocessor based system development aids. Concept of interfacing	
	5 th	1 st	4.2	Define Mapping & Data transfer mechanisms - Memory mapping & I/O Mapping.	
		2 nd	4.3	Concept of Memory Interfacing: - Interfacing EPROM & RAM Memories.	
		3 rd	4.4	Concept of Address decoding for I/O devices	
		4 th	4.5	Programmable Peripheral Interface: 8255.	
		5 th	4.6	ADC & DAC with Interfacing.	
		6 th	4.7	Interfacing Seven Segment Displays	
	M A Y	1 st	1 st	4.8	Generate square waves on all lines of 8255
			2 nd	4.9	Design Interface a traffic light control system using 8255.
			3 rd	4.10	Design interface for stepper motor control using 8255.
			4 th	4.11	Basic concept of other Interfacing DMA controller, USART
5 th			5.1	UNIT-05 Microprocessor (Architecture and programming- 8086-16 bit) Register Organization of 8086.	
2 nd		1 st	5.2	Internal architecture of 8086	
		2 nd	5.3	Signal Description of 8086	
		3 rd	5.4	General Bus Operation & Physical Memory Organization	
		4 th	5.5	Minimum Mode & Timings,	
3 rd		1 st	5.6	Maximum Mode & Timings,	
		2 nd	5.7	Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Mask able Interrupt, Mask able Interrupt	
		3 rd	5.8	8086 Instruction Set & Programming: Addressing Modes,	
		4 th		Instruction Set, Assembler Directives and Operators,	
4 th		1 st	5.9	Simple Assembly language programming using 8086 instructions.	

		2 nd	6.1	UNIT- 06 Microcontroller (Architecture and programming-8bit) Distinguish between Microprocessor & Microcontroller	
		3 rd	6.2	8 bit & 16 bit microcontroller	
		4 th	6.3	CISC & RISC processor	
		5 th	6.4	Architecture of 8051 Microcontroller	
	5 th	1 st	6.5	Signal Description of 8051 Microcontrollers	
		2 nd	6.6	Memory Organization-RAM structure, SFR	
	J U N E	1 st	1 st	6.7	Registers, timers, interrupts of 8051 Microcontrollers
			2 nd	6.8	Addressing Modes of 8051
3 rd			6.9	Simple 8051 Assembly Language Programming Arithmetic & Logic Instructions, JUMP, LOOP, CALL Instructions, I/O Port Programming.	
1 st					
2 nd		2 nd	6.10	Interrupts, Timer & Counters	
		3 rd	6.11	Serial Communication	
		4 th	6.12	Microcontroller Interrupts and Interfacing to 8255	
		5 th		Previous year question answer discussion	
		6 th		Previous year question answer discussion	

Coverage of Chapters up to the internal assessment (2nd week of May 2022): **1, 2 & 3.**

Learning Resources:

Sl no.	Name of Authors	Name of the publisher	Titles of the Book
1.	R.S.Gaonkar,	Penram International Publishing. (India) Pvt. Ltd.	Microprocessor architecture, programming & application with 8085
2.	Mazidi & Mazidi,	Pearson publication	The 8051 Microcontroller & Embedded Systems
3	A.K. Roy & K.M. Bhurchandi, -	TMH Publication	Advanced Microprocessor and Peripherals (Architecture, Programming & Interfacing
4	N.Senthli Kumar, M Sarvanan, S.Jeevanathan, S K Shah.	OXFORD	Microprocessor & Microcontroller.