LESSON PLAN

Department: CSE	Semester: 4th	Name of Faculty :
Subject: Microprocessor & Microcontroller (MP&MC)	**No. of days/ week Class allotted: 5**	**Effective From Date: 04.02.2025**
		No. of Week- 15
		Topic to be Covered:
Week	**Class Day**	**Theory**
1st	1st	**UNIT 1: MICROPROCESSOR (ARCHITECTURE AND PROGRAMMING-8 BIT-8085)**
	2nd	**1.1** Introduction to Microprocessor and Microcomputer & distinguish between them.
	3rd	**1.2** Concept of Address bus, data bus, control bus & System Bus
	4th	**1.3** General Bus structure Block diagram.
	5th	**1.4** Basic Architecture of 8085 (8 bit) Microprocessor
2nd	1st	**1.5** Signal Description (Pin diagram) of 8085 Microprocessor
	2nd	**1.6** Register Organizations, Distinguish between SPR & GPR, Timing & Control Module.
	3rd	**1.7** Stack, Stack pointer & Stack top. 1.8 Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)
	4th	**1. Doubt Clearing class** **2. Quiz test** **3. Assignment**
	5th	**UNIT 2: INSTRUCTION SET AND ASSEMBLY LANGUAGE PROGRAMMING**
3rd	1st	**2.1** Addressing data & Differentiate between one-byte, two-byte &three-byte instructions with examples.
	2nd	**2.2** Addressing modes in instructions with suitable examples.
	3rd	**2.3** Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control)
	4th	**2.4** Simple Assembly Language Programming of 8085
	5th	**2.4.1** Simple Addition & Subtraction
4th	1st	**2.4.2** Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits
	2nd	**2.4.3** Counters & Time delay (Single Register, Register Pair, More than Two Register)
	3rd	**2.4.4** Looping, Counting & Indexing (Call/JMP etc).
	4th	**2.4.5** Stack & Subroutines programs.
	5th	**2.4.6** Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer.
5th	1st	**2.4.7** Compare between two numbers
	2nd	**2.4.8** Array Handling (Largest number & smallest number in the array)
	3rd	**2.5** Memory & I/O Addressing.
	4th	**1. Doubt Clearing class** **2. Quiz test** **3. Assignment**

	5th	**UNIT 3: TIMING DIAGRAMS**
6th	**1st**	**3.1** Define opcode, operand, T-State, Fetch cycle,
	2nd	• Machine Cycle, Instruction cycle & discuss the concept of timing diagram.
	3rd	**3.2** Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle.
	4th	**3.3** Draw a neat sketch for the timing diagram for 8085 instruction (MOV, MVI, LDA instruction).
	5th	**1. Doubt Clearing class** **2. Quiz test** **3. Assignment**
7th	**1st**	**UNIT 4: MICROPROCESSOR BASED SYSTEM DEVELOPMENT AIDS**
	2nd	**4.1** Concept of interfacing
	3rd	**4.2** Define Mapping &Data transfer mechanisms - Memory mapping & I/O Mapping .
	4th	**4.3** Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories.
	5th	**4.4** Concept of Address decoding for I/O devices.
8th	**1st**	**4.5** Programmable Peripheral Interface: 8255
	2nd	**4.6** ADC & DAC with Interfacing.
	3rd	**4.7** Interfacing Seven Segment Displays
	4th	**4.8** Generate square waves on all lines of 8255
	5th	**4.9** Design Interface a traffic light control system using 8255.
9th	**1st**	**4.10** Design interface for stepper motor control using 8255.
	2nd	**1. Doubt Clearing class** **2. Quiz test** **3. Assignment**
	3rd	**UNIT 5: MICROPROCESSOR** **(ARCHITECTURE AND PROGRAMMING-16 BIT-8086)**
	4th	**5.1** Register Organisation of 8086
	5th	**5.2** Internal architecture of 8086
10th	**1st**	**5.3** Signal Description of 8086
	2nd	**5.4** General Bus Operation& Physical Memory Organisation
	3rd	**5.5** Minimum Mode &Timings,
	4th	**5.6** Maximum Mode &Timings,
	5th	**5.7** Interrupts and Interrupt Service Routines, Interrupt Cycle,
11th	**1st**	• Non-Maskable Interrupt, Maskable Interrupt
	2nd	**5.8** 8086 Instruction Set & Programming: Addressing Modes,
	3rd	• Instruction Set, Assembler Directives and Operators
	4th	**5.9** Simple Assembly language programming using 8086 instructions.
	5th	**1. Doubt Clearing class** **2. Quiz test** **3. Assignment**
12th	**1st**	**UNIT 6: MICROCONTROLLER** **(ARCHITECTURE AND PROGRAMMING-8 BIT)**
	2nd	**6.1** Distinguish between Microprocessor & Microcontroller
	3rd	**6.2** 8 bit & 16 bit microcontroller
	4th	**6.3** CISC & RISC processor

	5th	**6.4** Architectureof8051Microcontroller
13th	**1st**	**6.5** Signal Descriptionof8051Microcontrollers
	2nd	**6.6** Memory Organisation-RAM structure, SFR
	3rd	**6.7** Registers, timers, interrupts of 8051Microcontrollers
	4th	**6.8** Addressing Modes of 8051
	5th	**6.9** Simple 8051 Assembly Language Programming Arithmetic& Logic Instructions
14th	**1st**	• JUMP, LOOP, CALL Instructions, I/O Port Programming
	2nd	**6.10** Interrupts, Timer & Counters
	3rd	**6.11** Serial Communication
	4th	**6.12** Microcontroller Interrupts and Interfacing to 8255
	5th	**1. Doubt Clearing class** **2. Quiz test** **3. Assignment**
15th	**1st**	**Revision**
	2nd	**Revision**
	3rd	**Revision**
	4th	**Previous Year Question Discussions**
	5th	**Previous Year Question Discussions**

Signature of Faculty

HOD,
Senior Lecture, CSE
Govt. Polytechnic,
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