SYNERGY POLYTECHNIC, BBSR

The Lesson Plan

Descipline:COMPUTER SCIENCE & ENGINEERING	Semester:4TH		Name of the Teaching Faculty: SASWATI SANGHAMITRA PRADHAN
Subject:MICROPROCESSOR AND MICROCONTROLLER	No of Days/per week class allotted:5		Semester from Date: 16/01/2024 to Date:26/04/2024 No of Weeks:15
Week	Class Day	NO. of class	Theory/Practical Topics
			Unit-1: **Microprocessor (Architecture and Programming-8 bit-8085)**
1st	1st	1	1.1 Introduction to Microprocessor and Microcomputer & distinguish between them.
	2nd	2	1.2 Concept of Address bus, data bus, control bus & System Bus
	3rd	3	1.3 General Bus structure Blockdiagram.
	4th	4	1.4 Basic Architecture of 8085 (8 bit) Microprocessor
	5th	5	1.4 Basic Architecture of 8085 (8 bit) Microprocessor
2nd	1st	6	1.5 Signal Description (Pin diagram) of 8085 Microprocessor
	2nd	7	1.5 Signal Description (Pin diagram) of 8085 Microprocessor
	3rd	8	1.6 Register Organizations,Distinguish between SPR & GPR, Timing & Control,Module
	4th	9	1.6 Register Organizations,Distinguish between SPR & GPR, Timing & Control,Module
	5th	10	1.7 Stack, Stack pointer & Stack top.
3rd	1st	11	1.8 Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)
	2nd	12	1.8 Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)
	3rd	13	revision
	4th	14	problem
	5th	15	class test
			Unit-2: **Instruction Set and Assembly Language Programming**
	1st	16	2.1 Addressing data & Differentiate between one-byte, two-byte &three-byte
	2nd	17	2.2 Addressing modes in instructions with suitable examples

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4th	3rd	18	2.3 Instruction Set of 8085(Data Transfer, Arithmetic,Logic Branching, Stack & I/O , Machine Control)
		19	2.4 Simple Assembly Language Programming of 8085 2.4.1 Simple Addition & Subtraction
	4th	20	2.4.2 Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits
	5th	21	2.4.3 Counters & Time delay (Single Register, Register Pair, More than Two Register)
5th	1st	22	2.4.4 Looping, Counting & Indexing (Call/JMP etc)
	2nd	23	2.4.5 Stack & Subroutinesprogrames.
	3rd	24	2.4.6 Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer.
	4th	25	2.4.7 Compare between two numbers
	5th	26	2.4.8 Array Handling (Largest number & smallest number in the array)
6th	1st	27	2.5 Memory & I/O Addressing.
	2nd	28	revision
	3rd	29	problem
	4th	30	class test

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			Unit-3: TIMING DIAGRAMS
07th	1st	31	1.1 Define opcode, operand, T-State, Fetch cycle, Machine Cycle, Instruction cycle & discuss the concept of timing diagram
	2nd	32	1.2 Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle
	3rd	33	1.2 Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle
	4th	34	Draw a neat sketch for the timing diagram for 8085 instruction (MOV,MVI,LDA instruction).
	5th	35	Draw a neat sketch for the timing diagram for 8085 instruction (MOV,MVI,LDA instruction).
08th	1st	36	Draw a neat sketch for the timing diagram for 8085 instruction (MOV,MVI,LDA instruction).
	2nd	37	problem
			Unit-4 Microprocessor Based System Development Aids
	3rd	38	4.1 Concept of interfacing
	4th	39	4.2 Define Mapping &Data transfer mechanisms - Memory mapping & I/O Mapping
	5th	40	4.3 Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories
09th	1st	41	4.4 Concept of Address decoding for I/O devices
	2nd	42	4.5 Programmable Peripheral Interface: 8255
	3rd	43	4.6 ADC & DAC with Interfacing.
	4th	44	4.7 Interfacing Seven Segment Displays
	5th	45	4.8 Generate square waves on all lines of 8255
10th	1st	46	4.9 Design Interface a traffic light control system using 8255.
	2nd	47	4.10 Design interface for stepper motor control using 8255.
	3rd	48	4.10 Design interface for stepper motor control using 8255.

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			Unit-5 Microprocessor (Architecture and Programming-16 bit-8086)
11th	1st	49	5.1 Register Organisation of 8086
	2nd	50	5.2 Internal architecture of 8086
	3rd	51	5.3 Signal Description of 8086
	4th	52	5.4 General Bus Operation& Physical Memory Organisation
	5th	53	5.5 Minimum Mode &Timings,
12th	1st	54	5.6 Maximum Mode &Timings,
	2nd	55	5.7 Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt
	3rd	56	5.8 8086 Instruction Set & Programming: Addressing Modes, Instruction Set, Assembler Directives and Operators
	4th	57	5.8 8086 Instruction Set & Programming: Addressing Modes, Instruction Set, Assembler Directives and Operators
	5th	58	5.9 Simple Assembly language programming using 8086 instructions.
13th	1st	59	5.9 Simple Assembly language programming using 8086 instructions.
	2nd	60	5.7 Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt
		64	**Unit-6 Microcontroller (Architecture and Programming-8 bit):-**
14th	1st	65	6.1 Distinguish between Microprocessor & Microcontroller
	2nd	66	6.2 8 bit & 16 bit microcontroller
	3rd	67	6.3 CISC & RISC processor
	4th	68	6.4 Architectureof8051Microcontroller
	5th	69	6.5 Signal Descriptionof8051Microcontrollers
15th	1st	70	6.6 Memory Organisation-RAM structure, SFR
	2nd	71	6.7 Registers,timers,interruptsof8051Microcontrollers
	3rd	72	6.8 Addressing Modes of 8051
	4th	73	6.9 Simple 8051 Assembly Language Programming Arithmetic& Logic Instructions , JUMP, LOOP, CALL Instructions, I/O Port Programming
	5th	74	6.10Interrupts, Timer & Counters
16th	1st	75	programming
	2nd	76	programming
	3rd	77	programming
	4th	78	programming,
	5th	79	programming

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