Synergy Polytechnic,Bhubaneswar

The Lesson Plan

Descipline:Electrical Engineering	Semester:5th	Name of the Teaching Faculty:Satyabrata Pradhan
Subject:Digital Electronics & Microprocessor	No of Days/per week class allotted:5	Semester from Date: 01/08/2023 to Date: No of Weeks: 15
Week	Class Day	Theory/Practical Topics
1st	1st	**BASICS OF DIGITAL ELECTRONICS:** Binary, Octal, Hexadecimal number systems and compare with Decimal system
	2nd	Binary, Octal, Hexadecimal number systems and compare with Decimal system
	3rd	Binary addition, subtraction, Multiplication and Division
	4th	1's complement and 2's complement numbers for a binary number
	5th	Subtraction of binary numbers in 2's complement method
2nd	1st	Use of weighted and Un-weighted codes & write Binary equivalent number for a number in 8421,
	2nd	Excess-3 and Gray Code and vice-versa.
	3rd	Importance of parity Bit
	4th	Logic Gates: AND, OR, NOT, NAND, NOR and EX-OR gates with truth table
	5th	Realize AND, OR, NOT operations using NAND, NOR gates.
3rd	1st	Different postulates and De-Morgan's theorems in Boolean algebra
	2nd	Use Of Boolean Algebra For Simplification Of Logic Expression
	3rd	Karnaugh Map For 2,3,4 Variable
	4th	Simplification Of SOP And POS Logic Expression Using K-Map
	5th	Simplification Of SOP And POS Logic Expression Using K-Map
4th	1st	**COMBINATIONAL LOGIC CIRCUITS:** Give the concept of combinational logic circuits
	2nd	Half adder circuit and verify its functionality using truth table
	3rd	Realize a Half-adder using NAND gates only and NOR gates only.
	4th	Full adder circuit and explain its operation with truth table
	5th	Realize full-adder using two Half-adders and an OR – gate and write truth table
5th	1st	Full subtractor circuit and explain its operation with truth table.
	2nd	Operation of 4 X 1 Multiplexers and 1 X 4 demultiplexer
	3rd	Operation of 4 X 1 Multiplexers and 1 X 4 demultiplexer
	4th	Working of Binary-Decimal Encoder & 3 X 8 Decoder.

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1st	1st	Working of Two bit magnitude comparator
	2nd	Working of Two bit magnitude comparator
	3rd	problem practice
	4th	problem practice
	5th	problem practice
2nd	1st	**3. SEQUENTIAL LOGIC CIRCUITS:** Give the idea of Sequential logic circuits.
	2nd	State the necessity of clock and give the concept of level clocking and edge triggering,
	3rd	Clocked SR flip flop with preset and clear inputs.
	4th	Construct level clocked JK flip flop using S-R flip-flop and explain with truth table
	5th	Concept of race around condition and study of master slave JK flip flop.
3rd	1st	Give the truth tables of edge triggered D and T flip flops and draw their symbols.
	2nd	Applications of flip flops
	3rd	Define modulus of a counter
	4th	4-bit asynchronous counter and its timing diagram.
	5th	Asynchronous decade counter.
4th	1st	4-bit synchronous counter
	2nd	Distinguish between synchronous and asynchronous counters.
	3rd	State the need for a Register and list the four types of registers.
	4th	Working of SISO, SIPO, PISO, PIPO Register with truth table using flip flop
	5th	Working of SISO, SIPO, PISO, PIPO Register with truth table using flip flop
5th	1st	**4. 8085 MICROPROCESSOR:** Introduction to Microprocessors, Microcomputers
	2nd	Architecture of Intel 8085A Microprocessor and description of each block.
	3rd	Pin diagram and description.
	4th	Architecture of Intel 8085A Microprocessor and description of each block.
	5th	Pin diagram and description.

Sign of Faculty SSPradhan

HOD 26/7/23

Principal 26/7/23

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1st	1st	Stack, Stack pointer & stack top
	2nd	Interrupts
	3rd	Opcode & Operand,
	4th	Differentiate between one byte, two byte & three byte instruction with example
	5th	Instruction set of 8085 example
2nd	1st	Addressing mode
	2nd	Addressing mode
	3rd	Fetch Cycle, Machine Cycle, Instruction Cycle, T-State
	4th	Fetch Cycle, Machine Cycle, Instruction Cycle, T-State
	5th	Timing Diagram for memory read, memory write, I/O read, I/O write
3rd	1st	Timing Diagram for memory read, memory write, I/O read, I/O write
	2nd	Timing Diagram for 8085 instruction
	3rd	Counter and time delay
	4th	Simple assembly language programming of 8085
	5th	Simple assembly language programming of 8085
4th	1st	Basic Interfacing Concepts, Memory mapping & I/O mapping
	2nd	Basic Interfacing Concepts, Memory mapping & I/O mapping
	3rd	Basic Interfacing Concepts, Memory mapping & I/O mapping
	4th	Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
	5th	Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
5th	1st	Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
	2nd	Application using 8255: Seven segment LED display, Square wave generator, Traffic light Contr
	3rd	Application using 8255: Seven segment LED display, Square wave generator, Traffic light Contr
	4th	Application using 8255: Seven segment LED display, Square wave generator, Traffic light Contr
	5th	Application using 8255: Seven segment LED display, Square wave generator, Traffic light Contr

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