

Discipline: Electrical Engineering	Semester: 5th	Name of the Teaching Faculty: Swarna Manjari Sonal	
Subject: Digital Electronics and microprocessor	No of Days/Week Class Allotted: 5	Semester From date: 1.10.2021 To date: 18.1.2022	No. of Weeks:

WEEK	Class Day	Theory Topics
1st	1st	Basic of Digital Electronics Binary, octal, decimal and Hexadecimal numbers
	2nd	Conversion from one number system to another number system.
	3rd	Binary addition, Subtraction, multiplication and Division.
	4th	1's complement and 2's complement numbers for a binary number. Subtraction of binary numbers in 2's complement method.
	5th	Use of weighted and un-weighted code & write binary equivalent bit number for a number in 8421, excess-3 Gray code and vice versa.
2nd	1st	Importance of parity bit.
	2nd	Logic gate: AND, OR, NOT, NAND, NOR, EX-OR and EX-NOR gate with truth table.
	3rd	Realize AND, OR, NOT, ^{operation using} NAND, NOR gate.
	4th	Different postulates and De-Morgan's theorems in Boolean algebra.
	5th	Use of Boolean Algebra for simplification of logic expression.
3rd	1st	Karnaugh map for 2, 3, 4 variable.
	2nd	Karnaugh map for 2, 3, 4 variable logical expression.
	3rd	Simplification of SOP and POS logic expression using K-map.
	4th	Combination Logic Circuit: Give the concept of Combinational Logic Circuit.
	5th	Half adder circuit and verify its functionality.

WEEK	Class Day	Theory Topics
4 th	1st	Realize a Half adder using NAND gate only and NOR gate only.
	2nd	Full adder circuit and explain its operation with truth table.
	3rd	Realize full adder using two half adders and an OR-gate and write truth table.
	4th	Full Subtractor Circuit and explain its operation with truth table.
	5th	Operation of 4×1 multiplexer.
5 th	1st	Operation of $1 \times n$ demultiplexer.
	2nd	Working of binary - decimal encoder.
	3rd	Working of 3×8 decoder.
	4th	Working of two bit magnitude Comparator.
	5th	Sequential Logic Circuit: Give the idea of sequential logic circuit.
6 th	1st	State the necessity of clock and give the concept of level clocking and edge triggering.
	2nd	Clocked SR flip-flop with Preset and Clear input.
	3rd	Construct level clocked J-K flip flop using S-R flip flop and explain with truth table.
	4th	Concept of Race around condition and study of master slave J-K flip flop.
	5th	Give the truth tables of edge triggered D flip flop and draw their symbol.

Discipline: <u>Electrical Engineering</u>	Semester: <u>5th</u>	Name of the Teaching Faculty <u>ER. KISHORA KUMAR SASAMIL</u>	
Subject: <u>Digital Electronics and Microprocessor</u>	No of Days/Week Class Allotted: <u>5</u>	Semester From date: <u>1.10.2021</u> To date: <u>1.1.2022</u>	No. of Weeks:

WEEK	Class Day	Theory Topics
7th	1st	Give the truth table of edge triggered T flip flop and draw their symbols
	2nd	Application of flip flops.
	3rd	Define modulus of counter.
	4th	Unit asynchronous counter and its timing diagram
	5th	Asynchronous decade counter.
8th	1st	Unit synchronous counter.
	2nd	Distinguish betw ⁿ synchronous and Asynchronous counter.
	3rd	State the need for a Register and list the four types of register.
	4th	working of SISO, PISO, PIPO, SIPO register with truth table using flip flop.
	5th	8085 Microprocessor: Introduction to microprocessors, microcomputers
9th	1st	Architecture of intel 8085A microprocessor and description of each block.
	2nd	Pin diagram and description.
	3rd	Stack, Stack pointer and Stack top
	4th	Interrupts
	5th	OPcodes and Operand.

WEEK	Class Day	Theory Topics
10th	1st	Differentiate between one byte, two byte and three byte instruction with example.
	2nd	Instruction set of 8085 example.
	3rd	Addressing mode.
	4th	Fetch cycle, machine cycle, instruction cycle, T-state.
	5th	Timing diagram for memory read, memory write, I/O read, I/O write
11th	1st	Timing diagram for 8085 instruction.
	2nd	Counter and time delay
	3rd	Simple assembly language programming of 8085.
	4th	Interfacing and support chips: Basic interfacing concept, memory mapping and
	5th	functional block diagram and description of each block of Programmable Peripheral interface interse
12th	1st	Application using 8255: Seven Segment LED display.
	2nd	Square wave generator.
	3rd	Traffic light controller.
	4th	
	5th	