Theory	: 4 P/W	Internal Assessment	: 20 Marks
Total Period s :	60 P/ Sem	End Semester Exam	: 80marks
Examination	: 3 Hours	TOTAL MARKS	: 100 Marks
Sem	: 3rd E&TC	Start of Class	: 1.7.2024

WEEK	PERIOD	TOPIC
1st	1st	**Unit-1: Basics of Digital Electronics** 1.1 Number System-Binary, Octal, Conversion from one system to another number system.
	2nd	Decimal, Hexadecimal - Conversion from one system to another number system.
	3rd	1.2 Arithmetic Operation-Addition, Subtraction, Multiplication, Division,
	4th	1's & 2's complement of Binary numbers& Subtraction using complements method
2nd	1st	1.3 Digital Code & its application & distinguish between weighted & non-weight Code, Binary codes, excess-3 and Gray codes.
	2nd	1.4 Logic gates: AND,OR,NOT,NAND,-Symbol, Function, expression, truth table & timing diagram
	3rd	NOR, Exclusive-OR, Exclusive-NOR--Symbol, Function, expression, truth table & timing diagram
	4th	1.5 Universal Gates& its Realisation
3rd	1st	1.6 Boolean algebra, Boolean expressions, Demorgan's Theorems.
	2nd	1.7 Represent Logic Expression: SOP & POS forms
	3rd	1.8 Karnaugh map (3 & 4 Variables)&
	4th	Minimization of logical expressions ,don't care conditions
4th	1st	**Unit-2: Combinational logic circuits** 2.1 Half adder, Full adder
	2nd	Half Subtractor, Full Subtractor,
	3rd	Serial Binary 4 bit adder.
	4th	Parallel Binary 4 bit adder.
5th	1st	2.2 Multiplexer (4:1),
	2nd	De- multiplexer (1:4)
	3rd	Decoder,
	4th	Encoder
6th	1st	Digital comparator (3 Bit)
	2nd	Continue...
	3rd	2.3 Seven segment Decoder (Definition, relevance, gate level of circuit Logic circuit of above)
	4th	Seven segment Decoder (truth table, Applications of above)
7th	1st	**Unit-3: Sequential logic Circuits** 3.1 Principle of flip-flops operation, its Types,
	2nd	3.2 SR Flip Flop using NAND Latch (un clocked)
	3rd	SR Flip Flop using NOR Latch (un clocked)

			and applications
8th	1st		D Flip Flop-Symbol, logic Circuit, truth table and applications
	2nd		JK FLIP FLOP-Symbol, logic Circuit, truth table and applications
	3rd		T Flip Flop-Symbol, logic Circuit, truth table and applications
	4th		JK Master Slave flip-flops-Symbol, logic Circuit, truth table and applications
9th	1st		Continue…
	2nd		3.4 Concept of Racing and how it can be avoided.
	3rd		4.5 Concept of memories-RAM, ROM, static RAM, dynamic RAM,PS RAM
	4th		4.6 Basic concept of PLD & applications
10th	1st		**Unit-4: Registers, Memories & PLD** 4.1 Shift Registers-Serial in Serial -out, Serial- in Parallel-out, Parallel in serial out and Parallel in parallel out
	2nd		4.2 Universal shift registers-Applications.
	3rd		4.3 Types of Counter & applications
	4th		Asynchronous ripple counter (UP & DOWN),
11th	1st		Asynchronous ripple counter (UP & DOWN),
	2nd		4.4 Binary counter,
	3rd		Decade counter.
	4th		Synchronous counter,
12th	1st		Ring Counter
	2nd		**Unit-5: A/D and D/A Converters** 5.1 Necessity of A/D and D/A converters.
	3rd		5.2 D/A conversion using weighted resistors methods.
	4th		5.3 D/A conversion using R-2R ladder (Weighted resistors)network.
13th	1st		5.4 A/D conversion using counter method.
	2nd		5.5 A/D conversion using Successive approximate method
	3rd		Continue…..
	4th		**Unit-6: LOGIC FAMILIES**
14th	1st		6.1 Various logic families
	2nd		categories according to the IC fabrication process
	3rd		6.2 Characteristics of Digital ICs- Propagation Delay, fan-out, fan-in, Power Dissipation
	4th		Noise Margin ,Power Supply requirement &Speed with Reference to logic families.
15th	1st		6.3 Features, circuit operation &various applications of TTL(NAND)
	2nd		CONTINUE….
	3rd		Features, circuit operation &various applications of CMOS (NAND)
	4th		Features, circuit operation &various applications of CMOS (NOR)

28/6/24
(Lect in E&Tc)