

Discipline:- ELECTRICAL ENGG.	Semester:- 5 th	Name of the Teaching Faculty:- Er.D.Baidya
Subject:- DIGITAL ELECTRONICS & MICROPROCESS OR (TH-3)	No of Days/per Week Class Allotted :- 05	Semester From:-01.08.2023 To:-23.11.2023
Week	Class Day	Theory
1st	1st	Introduction to DIGITAL ELECTRONICS
	2nd	NUMBERS SYSTEMS AND CODES
	3rd	List different number systems & their relevance: binary, octal, decimal, Hexadecimal, Study the Conversion from one number system to another
	4th	Perform Arithmetic operations of binary number systems.
	5th	1's & 2's complement of Binary numbers., Perform Subtraction of binary numbers using complementary numbers. Perform multiplication and division of binary numbers.
2nd	1st	Define concept of Digital Code & its application. Distinguish between weighted & non-weighted Code
	2nd	Study Codes: definition, relevance
	3rd	Types of code (8-4-2-1, Gray, Excess-3 and importance of parity bit.
	4th	LOGIC GATES
	5th	Discuss the Basic Logic & representation using electric signals
3rd	1st	Learn the Basic Logic gates (NOT, OR, AND, NOR, NAND, EX-OR & EXNOR) – Symbol, function, expression, truth table & example IC nos.
	2nd	Define Universal Gates with examples & realization of other gate
	3rd	BOOLEAN ALGEBRA
	4th	Understand Boolean: constants, variables & functions. Comprehend the Laws of Boolean algebra
	5th	State and prove De Morgan's Theorems. Represent Logic Expression: SOP & POS forms & conversion
4th	1st	Simplify the Logic Expression/Functions (Maximum of 4 variables): using Boolean algebra and Karnaugh's map methods
	2nd	What is don't care conditions? Realisation of simplified logic expression using K-Map
	3rd	Realisation of simplified logic expression using gates. Illustrate with examples the above.
	4th	COMBINATIONAL CIRCUITS
	5th	Define a Combinational Circuit and explain with examples. Arithmetic Circuits (Binary)
5th	1st	Realise function, functional expression, logic circuit, gate level circuit, truth table & applications of Half-adders,
	2nd	Full-adder & full-Subtractor. Explain Serial & Parallel address: concept comparison & application
	3rd	Discuss Multiplexers: definition, relevance, gate level circuit of simple. De-multiplexers (1:4) logic circuit with truth Table
	4th	Explain the working of Binary-Decimal Encoder & Decoder.
	5th	Working of 2-bit Magnitude Comparator: logic expression, truth table
6th	1st	SEQUENTIAL CIRCUITS
	2nd	Define Sequential Circuit: Explain with examples.
	3rd	Know the Clock-definition characteristics, types of triggering & waveform.
	4th	Define Flip-Flop, Study RS, Clocked RS, D, T, JK, MS-JK flip-flop with logic Circuit and truth tables.

	5 th	Concept of Racing and how it can be avoided.
7 th	1 st	Applications of flip-flops & its conversion.
	2 nd	COUNTERS
	3 rd	List the different types of counters - Synchronous and Asynchronous.
	4 th	Explain the modulus of a counter
	5 th	COUNTERS
8 th	1 st	List the different types of counters - Synchronous and Asynchronous. Explain the modulus of a counter 4-bit asynchronous counter with timing diagram
	2 nd	Asynchronous decade counter
	3 rd	4-bit synchronous counter
	4 th	Compare Synchronous and Asynchronous counters and know their IC nos.
	5 th	REGISTERS
9 th	1 st	Explain the working of various types of shift registers - SISO
	2 nd	SIPO
	3 rd	PISO
	4 th	PIPO, with truth table using flip flop.
	5 th	8085 MICROPROCESSOR
10 th	1 st	Introduction to microprocessor, Microcomputers
	2 nd	Architecture of Intel 8085 A Microprocessor
	3 rd	Functional Block diagram and Description of each block.
	4 th	Pin diagram and description.
	5 th	Stack, Stack Pointer, Stack Top
11 th	1 st	Interrupts, Op-code & Operands
	2 nd	Grouping and Explanation of different group instructions with examples
	3 rd	Instruction sets & Addressing modes
	4 th	Instruction fetching and execution, Timing diagram of different machine cycle.
	5 th	Timing diagram of different machine cycle, 8085 A timing states.
12 th	1 st	Basic Interfacing Concept, Memory Mapping & I/O Mapping
	2 nd	Programmable peripheral interface Intel-8255, Functional block diagram and Operation of 8255, Programming of 8255
	3 rd	Application Using 8255: Seven Segment LED display
	4 th	Square Wave Generator
	5 th	Traffic light controller
13 th	1 st	Doubt Clearing Classes and Revision of Syllabus
	2 nd	
	3 rd	
	4 th	
	5 th	
14 th	1 st	Previous Five (05) Years Semester Question Answer Discussion
	2 nd	
	3 rd	
	4 th	
	5 th	

