KALAM INSTITUTE OF TECHNOLOGY (P), BERHAMPUR

LESSION PLAN 2024 (summer)

DISCIPLINE	SEMESTER	NAME OF THE FACULTY : Rajesh Kumar Behera
SUBJECT Analog Electronics & Linear IC (TH-4)	NO. OF DAY/ WEEK CLASS ALLOTED 05	SEMESTER FROM DATE: 16/01/2024 TO DATE: 26/04/2024 NO. OF WEEKS: 15

WEEK	CLASS/DAY	THEROY/ PRACTICAL TOPIC
1	1 16/01/2024	Working principle of Diode & its current equation & V-I characteristics
	2 17/01/2024	Breakdown of zener diode & construction, working characteristics
	3 18/01/2024	classification of Rectifier & working of different types
	4 19/01/2024	different types of Rectifier with working
	5	(Halk Wave, Fullwave (centertap & Bridge type))
2	1 22/01/2024	Working principle of PN-P & N-PN transistor
	2 23/01/2024	different types of transistor connection (CB, CE & CC)
	3 25/01/2024	Input & output characteristics of transistor in different
	4	connection (define Alpha, Beta & gamma of transistors in
	5	various modes, Basic concept of baising, type of baising)
3	1 29/01/2024	h-parameters model of BJT, load line & determine the Q-point
	2 30/01/2024	types of coupling, working principle & use of RC coupled Amplifier
	3 31/01/2024	Frequency Responses of RC coupled Amplifier & draw the curve
	4 01/02/2024	classify Power Amplifier & differente between voltage & power Amp.
	5 02/02/2024	Working principle of class A power Amplifier.
4	1 05/02/2024	Working principle of class B power Amplifier
	2 06/02/2024	Working principle of class C & class AB, class D power Amp.
	3 07/02/2024	Construction, working & advantages of pullpull Amplifier
	4 08/02/2024	FET & its classification & di
	5 09/02/2024	differentiated between JFET & BJT
5	1 12/02/2024	construction, working & characteristics JFET
	2 13/02/2024	Explain JFET as an amplifier, parameters of JFET
	3 15/02/2024	Establish relation among JFET parameters
	4 16/02/2024	construction & working principle of MOSFET
	5	
6	1 19/02/2024	classification & characteristics of MOSFET
	2 20/02/2024	Explain the operation of CMOS, VMOS & LDMOS
	3 21/02/2024	Define & classify Feedback Amplifier
	4 22/02/2024	types of Feedback (negative & positive feedback)
	5 23/02/2024	types of negetive Feedback Amplifier
7	1 26/02/2024	Block diagram of sine wave oscillator
	2 27/02/2024	types Requirement of oscillation Barkausen criterion
	3 28/02/2024	circuit diagram & operation of RC phaseshift oscillator
	4 29/02/2024	Circuit diagram & operation of Cristal & LC oscillator
	5 01/03/2024	circuit diagram & operation of wien bride oscillator
8	1 04/03/2024	defined & classify tuned amplifier. Explain RLC
	2 06/03/2024	Resonance curve & sharpness of Resonance
	3 07/03/2024	different type of non-linear circuit & application
	4 09/03/2024	different of clamper circuit & application
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WEEK	CLASS/DAY	THEROY/ PRACTICAL TOPIC
9	1 11/03/2024	Working of Astable, Monostable & Bistable multivibrator
	2 12/03/2024	Working & use of integrator using R-C circuit
	3 13/03/2024	Working & use of differentiator circuit using
	4 14/03/2024	R-C circuit, input/output waveform & frequency response
	5 15/03/2024	differential amplifier & explain its configuration
10	1 18/03/2024	Block diagram representation of a typical op-amp
	2 19/03/2024	types of integrated circuits IC's, package, typ's, pin
	3 20/03/2024	Input offset voltage, input offset current CMRR
	4 21/03/2024	Draw & explain the open loop configuration
	5 22/03/2024	voltage series feedback amplifier
11	1 27/03/2024	voltage shunt feedback amplifier
	2 28/03/2024	Summing scaling & averaging of inverting &
	3	non-inverting amplifier.
	4	
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12	102/04/2024	DC & AC Amplifier using op-amp
	203/04/2024	Integrator using op-amp
	304/04/2024	differentiator using op-amp
	4 05/04/2024	Active filter & describe the filter design
	5	
13	108/04/2024	concept of zero-crossing detector using op-amp
	209/04/2024	Block diagram & operation of IC 555, IC 565 timer
	3 10/04/2024	working of current to voltage convertor using op-amp
	4 12/04/2024	working voltage to frequency conversion using op-amp
	5	
14	1 15/04/2024	Working of frequency to voltage conversion using op-amp
	2 16/04/2024	operation of power supply using 78XX 79XX
	3 18/04/2024	operation of power supply using LM377
	4 19/04/2024	series with their pin configuration of 78XX
	5	
15	1 22/04/2024	series with their pin configuration of 79XX
	2 23/04/2024	series with their pin configuration of LM317
	3 24/04/2024	Functional block diagram & working of LM723
	4 25/04/2024	Functional block diagram & working of LM317
	5 26/04/2024	IC regulator of LM723 & LM317
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KALAM INSTITUTE OF TECHNOLOGY (P), BERHAMPUR

LESSION PLAN 2023 (Winter)

DISCIPLINE	SEMESTER	NAME OF THE FACULTY : Er. Rajesh Behera
SUBJECT Digital Electronics (TH-3)	NO. OF DAY/ WEEK CLASS ALLOTED 04	SEMESTER FROM DATE: 01/08/2023 TO DATE: 30/11/2023 NO. OF WEEKS: 16

WEEK	CLASS/DAY	THEROY/ PRACTICAL TOPIC
1	1 01/08/2023	Number System-Binary, octal, Decimal, Hexa-Decimal
	2 03/08/2023	Conversion from one number system to another NS
	3 04/08/2023	Arithmatic operation : (Addition, Substraction,
	4	Multiplication, Division)
	5	
2	1 07/08/2023	1's & 2's complement of Binary numbers
	2 08/08/2023	Addition & substraction using 1's & 2's complement method
	3 10 7/08/2023	Digital code & it's application
	4 11/08/2023	difference between weighted & non-weight code
	5	
3	1 14/08/2023	Binary codes, excess-3 and Gray codes
	2 17/08/2023	Logic gates-(AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR)
	3 18/08/2023	universal gates & it's Realization
	4	
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4	1 21/08/2023	Boolean algebra, Boolean expression, Demorgan's Theorems
	2 22/08/2023	Represent Logic Expression : SOP & POS forms
	3 24/08/2023	Karnaugh map (2,3&4 variables)
	4 25/08/2023	K-map (2,3&4 variables) & minimization of logic gates
	5	
5	1 28/08/2023	K-map (2,3&4 variables) & maximization of logic gates
	2 29/08/2023	Half adder, Full adder
	3 31/08/2023	Half substractor, Full substractor
	4 01/09/2023	Serial and parallel Binary 4bit adder
	5	
6	1 04/09/2023	Multiplexer (2:1&4:1), De-multiplexer (1:2 & 1:4)
	2 05/09/2023	Decoder (1 to 2 line, 2 to 4 line)
	3 07/09/2023	Encoder (2 to 1 line, 4 to 2 line)
	4 08/09/2023	Digital comparator (1 Bit magnitude comparator)
	5	
7	1 11/09/2023	Seven Segment Display / seven segment Decoder
	2 12/09/2023	principle of flip-flop operation, it's types
	3 14/09/2023	SR latch using NAND Gate & NOR gate
	4 15/09/2023	SR Flipflop using NAND, NOR Latch (un clocked)
	5	
8	1 18/09/2023	clocked SR, D Flip Flop
	2 21/09/2023	JK & T Flip Flop
	3 22/09/2023	JK master Slave Flip Flop
	4 25/09/2023	concept of Racing and how it can be avoided
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WEEK	CLASS/DAY	THEROY/ PRACTICAL TOPIC
9	1 26/09/2023	Shift Registers - SISO(Serial in Serial out)
	2 28/09/2023	SISO(Serial In parallel out)
	3 03/10/2023	PISO(parallel In serial out)
	4 05/10/2023	PIPO (parallel In parallel out)
	5	
10	1 06/10/2023	universal shift registers - Applications
	2 09/10/2023	Types of counter & applications
	3 10/10/2023	Binary counter
	4 12/10/2023	Asynchronous ripple counter.
	5	
11	1 13/10/2023	Decade counter
	2 16/10/2023	Synchronous counter
	3 17/10/2023	Asynchronous counter
	4 19/10/2023	Ring counter
	5	
12	1 20/10/2023	Concept of memories - RAM, ROM, PS RAM
	2 30/10/2023	concept of memories - Static Ram, dynamic RAM
	3 31/10/2023	Basic concept of PLD & applications
	4 02/11/2023	Nelesity of A/D converters
	5	
13	1 03/11/2023	Nelesity of D/A converters
	2 06/11/2023	D/A conversion using weighed resistor methods
	3 07/11/2023	D/A conversion using R-2R ladder networks
	4 09/11/2023	A/D conversion using counter method
	5	
14	1 10/11/2023	A/D Conversion using successive approximate methods
	2 13/11/2023	Various logic families & categories
	3 14/11/2023	characteristics of Digital ICs - progation Delay
	4 15/11/2023	Fan-out, Fan-In, Power Dissipation
	5	
15	1 16/11/2023	Noise margin, Power supply requirement
	2 20/11/2023	Speed with reference to logic families
	3 21/11/2023	logic families
	4 23/11/2023	circuit operation & applications of TTL (NAND)
	5	
16	1 24/11/2023	Circuit operation & application of TTL (NOR)
	2 28/11/2023	Circuit operation & application of CMOS (NAND)
	3 30/11/2023	circuit operation & application of CMOS (NOR)
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LESSION PLAN

DISCIPLINE ETC	SEMESTER 5th	NAME OF THE FACULTY	Er. Sagar Sahu
SUBJECT VLSI & EMBEDDED SYSTEM	NO. OF DAY/ WEEK CLASS ALLOTED 04	SEMESTER FROM DATE: 01/08/2023	TO DATE: 30/11/2023
		NO. OF WEEKS: 15	

WEEK	CLASS/DAY	THEROY/ PRACTICAL TOPIC
1	1 01/08/23	Historical Perspective Introduction
	2 02/08/23	Classification of cmos digital circuit types.
	3 04/08/23	Introduction to MOS transistors & Basic operation of MOSFET
	4 05/08/23	Structure and operation of MOSFET
	5	
2	1 08/08/23	MOSFET V-I characteristics
	2 09/08/23	working of MOSFET capacitances.
	3 11/08/23	Modelling of MOS Transistors including Basic concept of spice
	4 12/08/23	Flow circuit design procedures.
	5	
3	1 16/08/23	VLSI Design Flow & Y-chart
	2 18/08/23	Design Hierachy
	3 19/08/23	VLSI design style - FPGA, Gate array Design
	4 22/08/23	Standard cell based, Full custom
	5	
4	1 23/08/23	Simplified process sequence for fabrication
	2 25/08/23	Basic steps in fabrication process flow
	3 26/08/23	fabrication process of nMos Transistor.
	4 29/08/23	C-MOS n-well fabrication process flow
	5	MOS fabrication process by n-well p-substrate
5	1 01/09/23	MOS fabrication process by n-well p-substrate
	2 02/09/23	CMOS fabrication process by p-well n-substrate.
	3 05/09/23	CMOS fabrication process by p-well n-substrate.
	4	CMOS fabrication process by both p & n type substrate
	5	
6	1 08/09/23	Layout Design rules
	2 09/09/23	stick Diagram of cmos inverter
	3 12/09/23	Basic nMos Inverter
	4 13/09/23	working of Resistive-load Inverter
	5	
7	1 15/09/23	working of Resistive-load Inverter
	2 16/09/23	VTC characteristic of Resitive-load Inverter
	3 22/09/23	Inverter with n-type MOSFET load - Enhancement load
	4 23/09/23	Inverter with n-type MOSFET load - Depletion n-MOS Inverter
	5	
8	1 26/09/23	CMOS Inverter - circuit operation and characteristic
	2 27/09/23	Interconnect effects; Delay time Definations
	3 29/09/23	CMOS Inveter Design with Delay constrains.
	4 30/09/23	Define static Combinational logic, working
	5	of static CMOS logic circuit.

WEEK	CLASS/DAY	THEROY/ PRACTICAL TOPIC
9	1 03/10/23	CMOS logic circuit (NAND 2) Gate
	2 04/10/23	CMOS Transmission Gates (pass Gate)
	3 06/10/23	Complex logic circuit - Basics
	4 07/10/23	Classification of logic circuit based on their behavior.
	5	
10	1 10/10/23	SR Flip flop latch circuit
	2 11/10/23	Clocked SR latch only
	3 13/10/23	CMOS D latch
	4	
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11	1 17/10/23	Basic principle operation of Dynamic pass Transistor
	2 18/10/23	Dynamic RAM, SRAM
	3 20/10/23	Flash memory
	4 31/10/23	Design language (SPL RHDL)
	5	
12	1 01/11/23	Design strategies & concept of FPGA
	2 03/11/23	VHDL for design Synthesis using CPLD or FPGA
	3 04/11/23	Raspberry pi Basic idea.
	4 07/11/23	Embedded System overview, list of Embedded System
	5	
13	1 08/11/23	Embedded System Technologies.
	2 10/11/23	Technology of Embedded System.
	3 11/11/23	Processor Technology
	4 14/11/23	Design technology, processor technology
	5	
14	1 15/11/23	General purpose technology
	2 17/11/23	Software basics Architecture of single purpose processor
	3 18/11/23	Software basics Architecture of single purpose processor
	4 21/11/23	Single purpose processor with Hardware.
	5	
15	1 22/11/23	Application - Specific processor, microcontrollers
	2 24/11/23	Digital signal processing
	3 25/11/23	IC technology - Full custom
	4 28/11/23	VLSI semi-custom ASIC (Gate Array & standard cell)
	5 29/11/23	Basic Idea of Arduino microcontroller.
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