Badriprasad Institute of Technology, Sambalpur

Lesson plan for Theory -3, DIGITAL ELECTRONICS

Semester & Branch : 4TH SEM, ETC Engineering **Total Periods-60**

Name of the faculty : MRS.SWETANJALI NAYAK **No of periods /week-4**

WEEK	CLASS DAY	THEORY
1ST	1ST	NUMBER SYSTEM-BINARY, OCTAL, DECIMAL, HEXADECIMAL
	2ND	CONVERSION FROM ONE SYSTEM TO ANOTHER SYSTEM
	3RD	ARITHMETIC OPERATION-ADDITION, SUBSTRACTION, MULTIPLICATION, DIVISION
	4TH	1'S AND 2'S COMPLEMENT OF BINARY NUMBERS & SUBSTRACTION USING COMPLEMENT METHOD
2ND	1ST	DIGITAL CODE & ITS APPLICATION & DISTINGUISH BETWEEN WEIGHTED & NON-WEIGHTED CODE, BINARY CODES, EXCESS-3 & GRAY CODES
	2ND	LOGIC GATES- AND, OR, NOT, NAND, NOR, EXCLUSIVE-OR, EXCLUSIVE-NOR, SYMBOL, FUNCTION, EXPRESSION, TRUTH TABLE & TIMING DIAGRAM
	3RD	UNIVERSAL GATES & ITS APPLICATION
	4TH	BOOLEAN ALGEBRA, BOOLEAN EXPRESSION, DEMORGAN'S THEOREMS
3RD	1ST	RPRESNT LOGIC EXPRESSION- SOP & POS FORMS
	2ND	KARNAUGH MAP(3 & 4 VARIABLES) & MINIMIZATION OF LOGICAL EXPRESSIONS, DON'T CARE CONDITIONS
	3RD	COMBINATIONAL LOGIC CIRCUITS- HALF ADDER, FULL ADDER
	4TH	HALF SUBSTRACTOR, FULL SUBSTRACTOR
4TH	1ST	SERIAL & PARALLEL BINARY 4 BIT ADDER
	2ND	MULTIPLEXER (4:1)
	3RD	DE-MULTIPLEXER (1:4)
	4TH	DECODER, ENCODER
5TH	1ST	DIGITAL COMPARATOR (3 BIT)
	2ND	SEVEN SEGMENT DECODER- DEFINITION, RELEVANCE
	3RD	GATE LEVEL OF CIRCUIT, TRUTH TABLE
	4TH	APPLICATION OF ABOVE
6TH	1ST	SEQUENTIAL LOGIC CIRCUITS- PRINCIPLE OF FLIP-FLOPS OPERATION
	2ND	TYPES OF FLIP-FLOPS
	3RD	SR FLIP FLOP USING NAND
	4TH	SR FLIP FLOP USING NOR LATCH (UN LOCKED)
7TH	1ST	CLOCKED SR
	2ND	CLOCKED D
	3RD	CLOCKED JK
	4TH	CLOCKED T
8TH	1ST	JK MASTER SLAVE FLIP FLOPS- SYMBOL, TRUTH TABLE
	2ND	ITS APPLICATION
	3RD	CONCEPT OF RACING
	4TH	HOW TO AVOID RACING CONDITION
9TH	1ST	SHIFT REGISTERS- SERIAL IN SERIAL OUT, SERIAL IN PARALLEL OUT
	2ND	PARALLEL IN SERIAL OUT, PARALLEL IN PARALLEL OUT
	3RD	UNIVERSAL SHIFT REGISTERS- APPLICATIONS
	4TH	TYPES OF COUNTERS & APLICATIONS
10TH	1ST	BINARY COUNTER, ASYNCHRONOUS COUNTER(UP & DOWN)
	2ND	DECADE COUNTER, SYNCHRONOUS COUNTER, RING COUNTER
	3RD	CONCEPT OF MEMORIES: RAM, ROM, STATIC RAM, DYNAMIC RAM, PS RAM
	4TH	BASIC CONCEPTS OF PLD & APPLIATIONS

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11TH	1ST	NECESSITY OF A/D AND D/A CONVERTERS
	2ND	D/A CONVERSION USING WEIGHTED RESISTORS METHODS
	3RD	D/A CONVERSION USING R-2R LADDER(WEIGHTED RSISTORS) NETWORK
	4TH	A/D CONVERSION USING COUNTER METHOD
12TH	1ST	A/D CONVERSION USING SUCCESSIVE APPROXIMATE METHOD CONTD..
	2ND	A/D CONVERSION USING SUCCESSIVE APPROXIMATE METHOD
	3RD	LOGIC FAMILIES
	4TH	VARIOUS LOGIC FAMILIES
13TH	1ST	CATAGORIES ACCORDING TO THE IC FABRICATION PROCESS
	2ND	CHARACTERISTICS OF DIGITAL Ics
	3RD	PROPAGATION DELAY
	4TH	FAN-IN, FAN -OUT
14TH	1ST	POWER DISSIPATION
	2ND	NOISE MARGIN, POWER SUPPL REQUIREMENT
	3RD	SPEED WITH REFERENCE TO LOGIC FAMILES
	4TH	FEATURES, CIRCUIT OPERATION & VAIOUS APPLICATION OF TTL(NAND)
15TH	1ST	FEATURES, CIRCUIT OPERATION & VAIOUS APPLICATION OFCMOS(NAND & NOR)
	2ND	OBJECTIVE TYPE QUESTION DISCUSSION
	3RD	SEMESTER PATTERN TYPE QUESTION DISCUSSION
	4TH	PRACTICE TEST

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