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|  **LESSON PLAN** |
| **Semester: 3RD Branch: COMPUTER SCIENCE. Subject:-DIGITAL ELECTRONICS** |
| MONTH | NOs ofPeriods as Per Syllabus | NOs ofPeriodsActually available |  TOPICS TO BE COVERED |
| SEP | 1212 | 20 | **Unit-1: Basics of Digital Electronics*** 1. NumberSystem-Binary, Octal,Decimal,Hexadecimal-Conversionfromone systemtoanother numbersystem.
	2. ArithmeticOperation-Addition,Subtraction, Multiplication, Division,1‟s&2‟s

complement of Binary numbers&Subtraction usingcomplements method* 1. DigitalCode&itsapplication&distinguishbetweenweighted&non-weightCode, Binarycodes, excess-3andGraycodes.
	2. Logic gates:AND,OR,NOT,NAND,NOR,Exclusive-OR,Exclusive-NOR--Symbol,Function,expression, truthtable& timingdiagram
	3. Universal Gates&itsRealisation
	4. Booleanalgebra,Booleanexpressions,Demorgan‟s Theorems.
	5. Represent LogicExpression:SOP&POS forms
	6. Karnaughmap(3 &4Variables)&Minimization oflogicalexpressions,don‟tcare

conditionsUnit-2: CombinationalLogicCircuits* 1. Halfadder,Fulladder,HalfSubtractor,Full Subtractor,Serial andParallelBinary4 bitadder.
	2. Multiplexer(4:1), De-multiplexer(1:4),Decoder,Encoder,Digital comparator (3Bit)
	3. SevensegmentDecoder

(Definition,relevance,gatelevelofcircuitLogic circuit,truthtable,Applicationsofabove) |

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| OCTNOVDECJAN | 12080709 | 1514 | Unit-3:SequentiallogicCircuits

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| 3.1 | Principleof flip-flopsoperation, itsTypes, |  |
| 3.2 | SR FlipFlopusingNAND,NORLatch(un clocked) |
| 3.3 | Clocked SR,D,JK,T,JK Master Slaveflip-flops-Symbol, | logicCircuit, truth |
|  | table andapplications |  |
| 3.4 | ConceptofRacingand howitcan beavoided. |  |

**Unit-4:Registers, Memories &PLD**

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| 4.1 | Shift Registers-Serial in Serial-out,Serial-inParallel-out, | Parallelinserial out |
|  | and Parallel inparallel out |  |
| 4.2 | Universal shiftregisters-Applications. |  |
| 4.3 | TypesofCounter&applications |  |

* 1. Binarycounter, Asynchronousripplecounter(UP&DOWN),Decadecounter.
	2. Synchronous counter,RingCounter.
	3. Conceptofmemories-RAM,ROM,staticRAM, dynamic RAM,PSRAM
	4. BasicconceptofPLD&applications

Unit-5:A/DandD/A Converters* 1. Necessity of A/D and D/A converters.
	2. D/A conversion using weighted resistors methods.
	3. D/A conversionusing R-2Rladder(Weighted resistors)network.
	4. A/D conversionusingcountermethod.
	5. A/D conversionusingSuccessiveapproximatemethod

Unit-6:LOGICFAMILIES* 1. Various logic families&categoriesaccording tothe ICfabricationprocess
	2. CharacteristicsofDigitalICs-Propagation Delay,fan-out,fan-in,PowerDissipation

Noise Margin ,PowerSupplyrequirement&Speedwith Referencetologicfamilies.* 1. Features,circuitoperation&variousapplicationsofTTL(NAND),CMOS(NAND&NOR)
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|  | 60 | 49 |  |