

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY
Department of Electronics & Communication Engineering

LESSON PLAN

Subject Name: - Digital Electronics
Year: - 2nd

Subject Code: - EC-205A
Semester: - 3rd

Lecture No	Unit No	Topic	References
L1	Unit-1	Digital signals, AND, OR, NOT, NAND, NOR and Exclusive-OR operations	M.M.Mano, "Digital Design", Pearson Education India,2016.
L2	Unit-1	Boolean algebra, Basic postulates and fundamental theorems of Boolean algebra	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016
L3	Unit-1	number systems: binary, signed binary, octal, hexadecimal number	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016
L4	Unit-1	binary arithmetic,one's and two's complements arithmetic	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016
L5	Unit-1	Codes:BCD codes, BCD Arithmetic	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016
L6	Unit-1	Excess-3, Gray codes	A. Kumar, "Fundamentals of Digital circuits", Prentice

			Hall India, 2016
L7	Unit-1	Error detecting parity check codes	B.A. Forouzan, "Data communications and Networking", 4 th ed.
L8	Unit-1	Error correcting codes: Hamming code	B.A. Forouzan, "Data communications and Networking", 4 th ed.
L9	Unit-1	Standard representation of logic functions: SOP and POS forms, Simplification of switching functions using K-map,	M.M.Mano, "Digital Design", Pearson Education India,2016.
L10	Unit-1	Simplification of switching functions using K-map, Don't care conditions	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016 RP Jain, Modern Digital electronics, TMH
L11	Unit-1	Quine-McCluskey tabular methods,	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016 RP Jain, Modern Digital electronics, TMH
L12	Unit-1	Digital logic families: TTL, Schottky TTL and Tri-state logic.	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016 RP Jain, Modern Digital electronics, TMH
L13	Unit-1	CMOS logic, interfacing CMOS and TTL	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016

L14	Unit-2	Unit-2 Combinational Digital Circuits: Design procedure: Half adder, Full Adder	M.M.Mano, "Digital Design", Pearson Education India,2016. RP Jain, Modern Digital electronics, TMH
L15	Unit-2	Half subtractor, Full subtractor	M.M.Mano, "Digital Design", Pearson Education India,2016.
L16	Unit-2	Parallel binary adder, parallel binary Subtractor	M.M.Mano, "Digital Design", Pearson Education India,2016.
L17	Unit-2	Carry Look Ahead adder, Serial Adder/Subtractor	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016
L18	Unit-2	BCD adder	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016
L19	Unit-2	Binary Multiplier, Binary Divider	A. Kumar, "Fundamentals of Digital circuits", Prentice Hall India, 2016
L20	Unit-2	Multiplexer	RP Jain, Modern Digital electronics, TMH
L21	Unit-2	De-multiplexer,	RP Jain, Modern Digital electronics, TMH
L22	Unit-2	Decoder	A. Kumar, "Fundamentals of

			Digital circuits”, Prentice Hall India, 2016
L23	Unit-2	Encoders	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L24	Unit-2	Parity checker, parity generators,	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L25	Unit-2	Code converters, Magnitude Comparator	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L26	Unit-3	A 1-bit memory, the circuit properties of Bistable latch, the clocked SR flip flop,	RP Jain, Modern Digital electronics, TMH
L27	Unit-3	J- K, T and D types flip flops,	RP Jain, Modern Digital electronics, TMH
L28	Unit-3	applications of flip flops: shift registers,	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L29	Unit-3	serial to parallel & parallel to serial converter,	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L30	Unit-3	Synchronous counter,	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L31	Unit-3	Asynchronous mod counter	A. Kumar, “Fundamentals of

			Digital circuits”, Prentice Hall India, 2016
L32	Unit-3	FSM,	ZVI Kohavi , “Switching and Finite Automata Theory”, 2 nd ed. MGH.
L33	Unit-3	sequence generator and detector	
L34	Unit-4	Digital to analog converters: weighted resistor/converter,	RP Jain, Modern Digital electronics, TMH
L35	Unit-4	R-2R Ladder D/Aconverter,	RP Jain, Modern Digital electronics, TMH
L36	Unit-4	specifications for D/A converters,	RP Jain, Modern Digital electronics, TMH
L37	Unit-4	analog to digital converters: quantization and encoding, parallel comparator A/Dconverter,	RP Jain, Modern Digital electronics, TMH
L38	Unit-4	successive approximation A/D converter, specifications for A/D converters	RP Jain, Modern Digital electronics, TMH
L39	Unit-4	Characteristics of memories, read only memory (ROM), read and write memory (RAM),	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L40	Unit-4	Programmable logic array, Programmable array logic,	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
L41	Unit-4	Introduction to Field Programmable Gate Array (FPGA)	A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016

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Text Books:

1. M.M.Mano, “Digital Design”, Pearson Education India,2016.
2. Donald P. Leach and Albert Malvino, Digital Principles and Applications, 8th Edition, TMH,2003.
3. Taub Schiling, Digital Integrated electronics, TMH

Reference Books:

1. A. Kumar, “Fundamentals of Digital circuits”, Prentice Hall India, 2016
2. A.K. Maini, Digital electronics, Wiley India
3. RP Jain, Modern Digital electronics, TMH