

Course Name: Digital System Design

Faculty Name: Prof. D Roychoudhury

Institute Name: IIT, Kharagpur

Number Base Conversions, Octal and Hexadecimal Numbers, Complements of Numbers, Signed representation, Codes. Boolean Algebra, Boolean Functions, Canonical and Standard Forms, Digital Logic Gates. Gate Level Minimization – K-maps, Simplifications, Implementations of Logic circuits: Universal gates, others. Combinational circuits, Adder/subtractors, Multipliers, Comparators, Encoders, Multiplexers, others. Synchronous Sequential circuits – Latches, Flip-Flops. Finite State Machines of Sequential circuits. State reduction and assignment of Sequential circuits. Registers and counters. HDL models of Combinational and Sequential Circuits.