DIGITAL SYSTEM DESIGN

(5TH SEM, ECE, SECTION-2)

SYLLABUS (PART-A)

Combinational Circuits:

Review of switching algebra: Definitions, Theorems, Functions of n variable, Logic Detailed Diagram and Symbols minimization, Minimization Techniques: optimal combinations with K-map and tabular methods, simplification & minimization, complimentary approach with map method, map method for multi-output functions, Tabular and Iterative consensus method for obtaining prime implicants for single and multi-output functions.

Error Correction and Detection:

Error detection and correction techniques, Single error detection, Single error correction with double error

Fault detection and Location in combinational circuits:

Different methods of detecting and locating Faults in combinational circuits.

SYLLABUS (PART-B)

SECTION-B

Sequential Circuits: Synchronous circuits: Concept of state diagram and state table, state assignment, Analysis and synthesis of sequential circuits, designs of Next state decoder and output decoder, state reduction, Machine minimization of completely and incompletely specified machines.

Asynchronous Circuits: Analysis and Synthesis of Asynchronous circuits, Races and Cycles, hazards in asynchronous circuits. Sequential Machine Flow Charts, synthesis using sequential machine flow charts.

Fault detection and Location in sequential circuits.

TEXT BOOKS

1. Switching and Finite Automata Theory By: Kohavi, TMH publisher

2. Digital Circuits and Logic Design By: Lee, PHI publisher