

B.C.A. Part II Semester IV
Paper III
THEORY OF COMPUTATION

UNIT - I :

Finite Automata and Regular Expression : Finite State systems, Basic Definitions, Non-deterministic finite Automata, Finite Automata with moves, Regular Expressions, Two way finite automata, Finite automata with output, Application on Finite Automata.

UNIT - II :

Properties of Regular Sets : The pumping lemma for Regular Sets, Closure properties of Regular sets, Decision Algorithms for Regular Sets. Context Free Grammars, Context Free Grammar, Derivation Tree,

UNIT - III :

Simplification of context Free Grammars, Chomsky Normal form, Greibach normal form, The existence of inherently ambiguous context free languages. Properties of Context free languages : The pumping lemma for CFL's , Closure properties of CFL's,

UNIT - IV :

Push Down Automata : Informal description, Definitions, Push – Down Automata & Context free languages.

Reference Books:

1. Introduction to Automata Theory, Languages and Computation: John E. Hopcroft & Jeffrey D. Ullman
2. Theory of Computer Science : E. V. Krishnamoorthy .
3. Theory of computer Science : K. L. P. Mishra.