Summary of Contents – Net Theory and Its Applications: Flows in Networks
Author: Wai-Kai Chen (2003)

1. Graphs and Networks
Introduces basic graph concepts, directed graphs, special graph types, and graph matrices.

2. The Shortest Directed Path Problem
Discusses shortest path problems in directed networks and solution algorithms.

3. Maximum Flows in Networks
Covers flow definitions, cuts, Ford-Fulkerson method, layered nets, and blocking flows.

4. Minimum Trees and Communication Nets
Explores trees, forests, minimum spanning trees, and communication network synthesis.

5. Feasibility Theorems and Their Applications
Presents circulation theorems, supply-demand constraints, and feasible flow algorithms.

6. Applications of Flow Theorems to Subgraph Problems
Applies flow theory to subgraph existence and matrix realization problems.

7. Signal-Flow Graphs
Introduces signal-flow graphs and applications to linear systems and feedback amplifiers.

8. Other Net Applications
Includes Boolean matrices, switching networks, Tellegen’s theorem, and generalized signal-flow graphs.