## CONTENTS

### Chapter - I

Introduction to various Networks (or) Topologies 1-37

1.1 Introduction to Networks 1
1.2 Introduction to Routing Algorithms 5
1.3 Performance Measurers of Networks 9
1.4 Literature Review 11
1.5 Chapter summaries 36

### Chapter - II

Networking based on Shuffle Net and its Performance Measurers 38-51

2.1 Introduction to Shuffle Net 38
2.2 Algorithm for calculation of various parameters of Shuffle Net 39
2.3 Calculation of various parameters of Shuffle Net 43
2.4 Results and Discussions 46
Remarks 51

### Chapter - III

Networking based on De Bruijn Graphs and its Performance Measures 52-64

3.1 Introduction to De Bruijn Graphs 52
3.2 Algorithm for calculation of various parameters of De Bruijn Graphs 53
3.3 Calculation of various parameters of De Bruijn Graphs 56
3.4 Results and Discussions 59
Remarks 64

### Chapter - IV

Networking based on Kautz Graphs and its Performance Measures 65-79

4.1 Introduction to Kautz Graphs 65
4.2 Algorithm for calculation of various parameters of Kautz Graphs 67
4.3 Calculation of various parameters of Kautz Graphs 72
4.4 Results and Discussions 74
Remarks 79

### Chapter - V

Networking based on Modified De Bruijn Graphs and its Performance Measures 80-95

5.1 Introduction to Modified De Bruijn Graphs 80
5.2 Algorithm for calculation of various parameters of Modified De Bruijn Graphs 81
5.3 Calculation of various parameters of Modified De Bruijn Graphs 88
5.4 Results and Discussions 90
Remarks 95
Chapter - VI
Critical Comparison of Various Networks With respect to their Performance Measures

6.1 Comparison of various networks with respect to total number of nodes 96
6.2 Comparison of various networks with respect to Average Hop Length 103
6.3 Comparison of various networks with respect to Average Edge Loading 108
6.4 Comparison of various networks with respect to Maximum Edge Loading 113
6.5 Comparison of various networks with respect to Average Network Utilization 118
6.6 Comparison of various networks with respect to Throughput 123
6.7 Selection of best network based on ranks 128
6.8 Further Scope of the work 136

References 137-147