Contents

Chapter No.	Title	Page No.
Chapter 0	**Introduction and Summary**	
0.1	Introduction	1
0.2	Importance	2
0.3	Literature Survey	4
0.4	Chapter wise Summary	8
Chapter 1	**Generation of Non–Uniform Variates**	
1.1	Introduction	13
1.2	Generation of Random Samples from Univariate Discrete Distributions	14
1.3	Generation of Random Samples from Cont. Distributions by Inversion method	23
1.4	Generation of Random Samples by transformation method	28
1.5	Generation of Random Samples from Cont. Distributions by Accept–Reject method	36
Chapter 2	**Monte Carlo Techniques and Applications**	
2.1	Introduction	47
2.2	Monte Carlo Methods in Statistical Inference	48

2.3 Monte Carlo integration 53

2.4 Importance Sampling 57

2.5 Expectation – Maximization Algorithm 65

Chapter 3 Markov Chain and M – H Algorithms

3.1 Introduction 84

3.2 Markov chain and its properties 85

3.3 Generation of Markov chain 92

3.4 Metropolis – Hastings algorithm 94

Chapter 4 The Gibbs Sampler

4.1 Introduction 119

4.2 Gibbs Sampler in multivariate case 120

4.3 Gibbs Sampler in bivariate case 122

4.4 Convergence of Gibbs Sampler 124

Appendix I 144

Appendix II 148

Appendix III 153

Appendix IV 164

Bibliography 170