## CONTENTS

**Chapter 1: Introduction**  

1.1 Scheduling  
1.1.1 Outline and Scope of Scheduling Problems  
1.1.2 NP - Hardness and Completeness  
1.1.3 Basic Structure of Scheduling Problems  
1.1.4 Modelling  
1.1.5 Terminology  
1.1.6 Notations  
1.1.7 Different Effectiveness Measures  
1.2 Classification  
1.3 Single Machine Scheduling  
1.3.1 Shortest Processing Time  
1.3.2 Weighted Shortest Processing Time (WSPT)  
1.3.3 Earliest Due Dates (EDD)  
1.3.4 Slack Time Remaining (STR) Rule  
1.4 Flow Shop Scheduling Problem  
1.4.1 Assumptions  
1.4.2 Mathematical Model  
1.4.3 Gradual Development and Approaches Used  

1-28
Chapter 2: Flow Shop Scheduling with Setup Times for Jobs on Machines 29-36

2.1 Introduction 29
2.2 Problem Description 30
2.3 Development of procedure 31
  2.3.1 Algorithm 34
2.4 Numerical Example 35

Chapter 3: Flow Shop Scheduling with Loading and Unloading Time for Transport Agent between Two Machines 37-44

3.1 Introduction 37
3.2 Problem Description 38
3.3 Development of procedure 38
  3.3.1 Algorithm Finding An Optimal Sequence 42
3.4 Numerical Example 43

Chapter 4: Three Machines in Tandem With Setup and Transportation Times of Jobs 45-56

4.1 Introduction 45
4.2 Problem Description 46
4.3 Development of procedure 46
  4.3.1 Algorithm 51
4.4 Flow-Shop Scheduling Involving Job Weights and Break-Down Intervals of Machines 51
  4.4.1 Algorithm2 52
4.5 Numerical Example 54
Chapter 5: Three Machines in Tandem with Loading, Transportation and Unloading Times of Jobs 57-70

5.1 Introduction 57
5.2 Problem Description 58
5.3 Development of procedure 59
  5.3.1 Algorithm 64
5.4 Flow-shop Scheduling Involving Job Weights and Break-down Intervals of Machines 65
  5.4.1 Algorithm 66
5.5 Numerical Example 68

Chapter 6: Machines in Tandem with a Single Transport Facility in Between 71-82

6.1 Introduction 71
6.2 Problem Description 72
6.3 Development of procedure 73
  6.3.1 Algorithm 80
6.4 Numerical Example 81

Conclusion 83-84

Future Scope 85

Bibliography 86-97