

# CONTENTS

Preface	v
<b>CHAPTER I</b>	<b>1–98</b>
Section A. Estimation and costing	1
Section B. Analysis of rates	9
Section C. Specifications	37
Section D. Earthwork	50
Section E. Valuation	62
Section F. Contracts	81
<b>CHAPTER 2</b>	<b>99–212</b>
Section A. Introduction	99
Section B. Critical Path Method (CPM)	103
Section C. Program Evaluation Review Techniue (PERT)	110
Section D. Optimal Scheduling	115
Section E. Updating the Network	129
Section F. Resource Allocation	135
Section G. Cash as a Resource	157
Section H. Other Construction Planning Technique	163
Section I. Assembly Line Process	174
Section J. Precedence Diagrams (PN) or (A–O–N) Diagrams	183
Section K. Electronic Construction Management	188
<b>CHAPTER 3 CIVIL ENGINEERING SYSTEMS</b>	<b>213–283</b>
<b>CHAPTER 4</b>	<b>284–379</b>
Section A. Pozzolanas	284
Section B. Ferrocement	292
Section C. Light Weight Construction Technology	313

**viii Contents**

Section D. Non-Conventional Structures	334
Section E. Energy Saving by use of Different Materials	347
Section F. Constraints	353
Section G. Major Construction Problems	369
<b>REFERENCES</b>	<b>380</b>
<b>APPENDIX I : A Highway Project</b>	<b>383</b>
<b>APPENDIX II : Probabilistic Decision Making</b>	<b>401</b>