

CONTENTS

<i>Preface</i>	<i>xvii</i>
<i>Acknowledgments</i>	<i>xxi</i>

1

COMPUTERS ARE EVERYWHERE 1

Introduction	1
A Variety of Applications	4
Societal Issues	11
Summary	17
Notes	18
Additional Readings	19

2

COMPUTERS AND THE HUMAN IMAGINATION 21

Introduction	21
The Intelligent Machine in Fact and Fiction	22

Computers as a Creative Medium	26
Contemporary Views of the Machine	33
Artificial Intelligence: A Brief Introduction	34
Summary	39
Notes	40
Additional Readings	41

3

CRITICISM AND HISTORY 43

Introduction	43
Comments on Technological Change	44
A Brief History of Computers	52
The Emergence of the Chip	63
Summary	68
Notes	69
Additional Readings	70

4

THE BUSINESS WORLD 73

Introduction	73
Data Processing Systems	74
Management Information Systems: A Promise Unrealized?	81
The Office of the Future	87
Organizational and Social Issues	95
Summary	97

Contents	xi
Notes	98
Additional Readings	100

5

MEDICINE AND COMPUTERS **103**

Introduction	103
Medical Information Systems	104
Medical Applications	109
Artificial Intelligence in Medicine	112
Computers and the Disabled	115
Social Issues	118
Summary	120
Notes	121
Additional Readings	122

6

COMPUTERS AND EDUCATION **125**

Introduction	125
Computer-Assisted Instruction (CAI)	126
Computer-Assisted Learning (CAL)	131
Computers in Higher Education	133
Computer Literacy	135
Issues and Problems	136
Summary	140

Notes	141
Additional Readings	142

7

GOVERNMENT AND COMPUTERS 145

Introduction	145
Information Processing: Issues and Problems	146
The Political Process	151
The Nation's Defense	154
Issues and Problems	160
Summary	162
Notes	163
Additional Readings	165

8

COMPUTERS AND THE LAW 167

Introduction	167
Computer Crime	168
The Legal Protection of Software	176
Other Developments	184
Summary	186
Notes	187
Additional Readings	189

9

PRIVACY AND FREEDOM OF INFORMATION 191

Introduction	191
The Nature of Privacy	197
Databases	200
Privacy Legislation	203
Freedom of Information	210
Issues and Problems: Present and Future	212
Summary	217
Notes	218
Additional Readings	219

10

EMPLOYMENT AND UNEMPLOYMENT 221

Introduction	221
Experiences of Workers	223
Computers and Employment	226
The Response of Unions	235
Women, Computers, and Work	237
The Changing Nature of Work	243
Summary	247
Notes	248
Additional Readings	251

11**BUSINESS AND GOVERNMENT****253**

Introduction	253
Industry Regulation	256
EFTS: Electronic Funds Transfer Systems	265
Competitiveness	270
National Industrial Policy	274
Other Issues	278
Summary	283
Notes	284
Additional Readings	286

12**ROBOTICS AND INDUSTRIAL AUTOMATION****289**

Introduction	289
Industrial Robotics	290
Current Use and Development	292
Why Use Robots? Work and Productivity	297
Industrial Automation	304
Summary	308
Notes	308
Additional Readings	310

13

THE INFORMATION SOCIETY

313

Introduction	313
The Home/Personal Computer	314
Electronic Mail, Teleconferencing, and Bulletin Boards	317
Videotex	320
Perspectives on the Information Society	328
Summary	333
Notes	334
Additional Readings	335

14

ETHICS AND PROFESSIONALISM

337

Introduction	337
Ethics	340
Professionalism	342
Final Comments	355
Summary	360
Notes	361
Additional Readings	362
<i>Appendix: Magazines, Journals, and Associations</i>	365
<i>Index</i>	369