

CONTENTS

PREFACE	xi
ACKNOWLEDGMENTS	xiii
INTRODUCTION	xv
CHAPTER 1 Basics of biotechnology	1
CHAPTER 2 DNA, RNA, and protein.....	33
CHAPTER 3 Recombinant DNA technology	63
CHAPTER 4 DNA synthesis <i>in vivo</i> and <i>in vitro</i>	97
CHAPTER 5 RNA-based technologies	131
CHAPTER 6 Immune technology	181
CHAPTER 7 Nanobiotechnology	219
CHAPTER 8 Genomics and gene expression	249
CHAPTER 9 Proteomics	295
CHAPTER 10 Recombinant proteins.....	335
CHAPTER 11 Protein engineering	365
CHAPTER 12 Environmental biotechnology.....	393
CHAPTER 13 Synthetic biology	419
CHAPTER 14 From cell phones to cyborgs	447
CHAPTER 15 Transgenic plants and plant biotechnology	461
CHAPTER 16 Transgenic animals.....	493
CHAPTER 17 Inherited defects and gene therapy.....	523
CHAPTER 18 Cloning and stem cells.....	565
CHAPTER 19 Cancer	593
CHAPTER 20 Aging and apoptosis.....	627
CHAPTER 21 Viral and prion infections.....	663
CHAPTER 22 Biological warfare: infectious disease and bioterrorism.....	687
CHAPTER 23 Forensic molecular biology.....	721
CHAPTER 24 Bioethics in biotechnology	747
GLOSSARY	775
INDEX	823

