

# Brief Contents

## part one

### Introduction 1

- 1 Overview of Genetics 1
- 2 Cells 17
- 3 Development 41

## part two

### Transmission Genetics 67

- 4 Mendelian Inheritance 67
- 5 Extensions and Exceptions to Mendel's Laws 85
- 6 Matters of Sex 103
- 7 Multifactorial and Behavioral Traits 123

## part three

### DNA and Chromosomes 143

- 8 DNA Structure and Replication 143
- 9 Gene Action 163
- 10 Gene Mutation 181
- 11 Chromosomes 201

## part four

### Population Genetics 227

- 12 When Allele Frequencies Stay Constant 227

- 13 Changing Allele Frequencies 241

- 14 Human Origins and Evolution 261

## part five

### Immunity and Cancer 281

- 15 Genetics of Immunity 281
- 16 The Genetics of Cancer 305

## part six

### Genetic Technology 325

- 17 Genetic Engineering 325
- 18 Gene Therapy and Genetic Counseling 343
- 19 Agricultural Biotechnology 361
- 20 Reproductive Technologies 377
- 21 Genomics 393

Answers A-1

Glossary G-1

Credits C-1

Index I-1