

Brief Contents

Part One

Introduction 1

- | | | |
|---|----------------------|----|
| 1 | Overview of Genetics | 1 |
| 2 | Cells | 19 |
| 3 | Development | 47 |

Part Two

Transmission Genetics 75

- | | | |
|---|--|-----|
| 4 | Mendelian Inheritance | 75 |
| 5 | Extensions and Exceptions to Mendel's Laws | 95 |
| 6 | Matters of Sex | 115 |
| 7 | Multifactorial Traits | 137 |
| 8 | The Genetics of Behavior | 155 |

Part Three

DNA and Chromosomes 171

- | | | |
|----|-------------------------------|-----|
| 9 | DNA Structure and Replication | 171 |
| 10 | Gene Action and Expression | 189 |
| 11 | Gene Mutation | 211 |
| 12 | Chromosomes | 235 |

Part Four

Population Genetics 263

- | | | |
|----|---------------------------------------|-----|
| 13 | When Allele Frequencies Stay Constant | 263 |
| 14 | Changing Allele Frequencies | 277 |
| 15 | Human Origins and Evolution | 299 |

Part Five

Immunity and Cancer 323

- | | | |
|----|------------------------|-----|
| 16 | Genetics of Immunity | 323 |
| 17 | The Genetics of Cancer | 351 |

Part Six

Genetic Technology 371

- | | | |
|----|---------------------------------------|-----|
| 18 | Genetically Modified Organisms | 371 |
| 19 | Gene Therapy and Genetic Counseling | 389 |
| 20 | Agricultural Biotechnology | 407 |
| 21 | Reproductive Technologies | 425 |
| 22 | The Human Genome Project and Genomics | 441 |