

CONTENTS

PART INTRODUCTION	1
CHAPTER 1 OVERVIEW OF GENETICS	1
PART II PATTERNS OF INHERITANCE	16
CHAPTER 2 MENDELIAN INHERITANCE	16
CHAPTER 3 REPRODUCTION AND CHROMOSOME TRANSMISSION	45
CHAPTER 4 EXTENSIONS OF MENDELIAN INHERITANCE	75
CHAPTER 5 LINKAGE AND GENETIC MAPPING IN EUKARYOTES	100
CHAPTER 6 GENETIC TRANSFER AND MAPPING IN BACTERIA AND BACTERIOPHAGES	137
CHAPTER 7 NON-MENDELIAN INHERITANCE	167
CHAPTER 8 VARIATION IN CHROMOSOME STRUCTURE AND NUMBER	196
PART III MOLECULAR STRUCTURE AND REPLICATION OF THE GENETIC MATERIAL	230
CHAPTER 9 MOLECULAR STRUCTURE OF DNA AND RNA	230
CHAPTER 10 CHROMOSOME ORGANIZATION AND MOLECULAR STRUCTURE	259
CHAPTER 11 DNA REPLICATION	286
PART IV MOLECULAR PROPERTIES OF GENES	312
CHAPTER 12 GENERAL PROPERTIES OF GENE STRUCTURE AND FUNCTION	312
CHAPTER 13 GENE TRANSCRIPTION AND RNA MODIFICATION	338
CHAPTER 14 TRANSLATION OF mRNA	367
CHAPTER 15 GENE REGULATION IN BACTERIA AND BACTERIOPHAGES	394
CHAPTER 16 GENE REGULATION IN EUKARYOTES	426
CHAPTER 17 GENE MUTATION AND DNA REPAIR	454
CHAPTER 18 RECOMBINATION AND TRANSPOSITION AT THE MOLECULAR LEVEL	482
PART V GENETIC TECHNOLOGIES	508
CHAPTER 19 RECOMBINANT DNA TECHNOLOGY	508
CHAPTER 20 GENOME ANALYSIS	540
CHAPTER 21 MOLECULAR GENETICS AND BIOTECHNOLOGY	573
CHAPTER 22 COMPUTER ANALYSIS OF GENETIC SEQUENCES	600
PART VI GENETIC ANALYSIS OF INDIVIDUALS AND POPULATIONS	621
CHAPTER 23 GENETICS OF CANCER AND OTHER HUMAN DISEASES	621
CHAPTER 24 DEVELOPMENTAL GENETICS	647

CHAPTER 25 QUANTITATIVE GENETICS	675
CHAPTER 26 POPULATION GENETICS	704
CHAPTER 27 EVOLUTIONARY GENETICS	734
APPENDIX EXPERIMENTAL TECHNIQUES	762
GLOSSARY G-1	
SOLUTIONS TO EVEN-NUMBERED PROBLEMS S-1	
CREDITS C-1	
INDEX I-1	