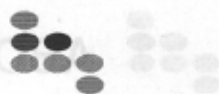


BRIEF CONTENTS



part one FOUNDATIONS

1 THE CHEMICAL BASIS OF LIFE 1

2 AQUEOUS CHEMISTRY 24

part two MOLECULAR STRUCTURE AND FUNCTION

3 FROM GENES TO PROTEINS 51

4 PROTEIN STRUCTURE 87

5 PROTEIN FUNCTION 121

6 HOW ENZYMES WORK 158

7 ENZYME KINETICS AND INHIBITION 188

8 LIPIDS AND MEMBRANES 220

9 MEMBRANE TRANSPORT 241

10 SIGNALING 266

11 CARBOHYDRATES 290

part three METABOLISM

12 METABOLISM AND BIOENERGETICS 308

13 GLUCOSE METABOLISM 338

14 THE CITRIC ACID CYCLE 370

15 OXIDATIVE PHOSPHORYLATION 394

16 PHOTOSYNTHESIS 420

17 LIPID METABOLISM 442

18 NITROGEN METABOLISM 475

19 REGULATION OF MAMMALIAN
FUEL METABOLISM 509

part four GENETIC INFORMATION

20 DNA REPLICATION AND REPAIR 529

21 TRANSCRIPTION AND RNA 561

22 PROTEIN SYNTHESIS 590