547.758 WES

CONTENTS

PART I FUNDAMENTALS OF ENZYMOLOGY

1 The Chemistry of Enzymes 5
2 The Velocities of Enzymes-Catalyzed Reactions 16
3 Enzymes-Substrate Intermediates 33
4 Inhibition, Activation, Inactivation, pH Effects 42
5 Substrate Specificity 62
6 Theories of Enzyme Action 69

PART II THE FORMS OF ENZYME MECHANISMS

7 Single- and Double-Displacement Mechanisms 85
8 Substituted Enzymes and Ternary Complexes 91
9 Steady-State Kinetic Analysis of Two-Substrate Formal Mechanisms 104

PART III THE PARTICULARS OF ENZYME MECHANISMS

10 Rate and Equilibrium Constants from Steady-State Velocity and Isotope Equilibration Studies 115
11 Rate Constants from Pre-Steady-Studies 129
12 The Direction of Electronic Displacement – Analogue Substrates 139
13 Thermodynamic and Activation Parameters: Variation of Temperature, Dielectric Constant, Ionic Strength 144
14 Identification of Specific Groups: Use of pH Variation and “Group Specific” Reagents 154

PART IV METABOLIC CONTROL AT THE ENZYME LEVEL

15 Regulatory Enzymes and Sigmoid Kinetics 169
16 Coupled and Cyclic Systems 179

Appendix 189
Index 201