CONTENTS

1.

PSYCHOLOGY: A SCIENCE AND A PROFESSION

1

What Is Psychology? 1 | Science and Psychology 2 | The Scientific Methods 5 | Reliability and Validity 15 | Psychology and Other Disciplines 16 | Psychology in 1890 and Today 17 | Fields of Contemporary Psychology 19 | The Profession of Psychology 25 | Overview of this Book 30 | Summary 31, Exercises 32, Selected References for Further Study 33

2.

THE HUMAN NERVOUS SYSTEM AND ENDOCRINE GLANDS

35

The Human Nervous System: General Considerations 36 | Structural Characteristics of Neurons 37 | Functional Characteristics of Neurons 39 | Divisions of the Nervous System and Connections to Them 42 | The Peripheral Nervous System 44 | Methods Used in Research on the Nervous System 47 | Central Nervous System: Spinal Cord and Lower Brain Structures 49 | Central Nervous System: Diencephalon 52 | Central Nervous System: Telencephalon 53 | Central Nervous System: Limbic and Reticular Systems 57 | Endocrine Glands and Behavior 60 | Summary 64, Exercises 67, Selected References for Further Study 67

3. HEREDITY AND DEVELOPMENT

69

The Genetics of Behavior 70 | Prenatal Development 76 | Motor Development after Birth 80 | Perceptual Development after Birth 86 | Personality Development 91 | Summary 102, Exercises 105, Selected References for Further Study 106

4. MOTIVATION AND EMOTION 109

What Is Motivation? 109 | Theories of Motivation 114 | Representative Physiological (Inborn) Motives 120 | Psychosocial Motives 133 | Emotion 137 | Complex Effects of Motivation and Emotion on Behavior 145 | Summary 149, Exercises 152, Selected References for Further Study 154

5. SENSATION AND PERCEPTION 155

Vision 156 | Audition 169 | The Cutaneous (Skin) Senses 188 | The Chemical Senses 191 | The Labyrinthine Senses 195 | The Kinesthetic Sense 196 | Some Problems in Perception 197 | Psychophysics 205 | Summary 211, Exercises 214, Selected References for Further Study 215

6. LEARNING AND REMEMBERING 217

Definition and Introduction 217 | Classical Conditioning 218 | Instrumental Conditioning 224 | Reinforcement 227 | Measuring Learning 231 | Learning Discriminations and Skills 234 | Problem Solving 239 | Verbal Learning 240 | Transfer of Training 243 | Remembering 244 | Why Does Forgetting Occur? 248 | Short-Term Memory versus Long-Term Memory 251 | Other Factors Related to the Efficiency of Learning and Remembering 252 | Physiological and Biochemical Factors in Learning and Memory 258 | Three Applica-

tions of the Principles of Learning 265 | Summary 270, Exercises 272, Selected References for Further Study 274

7. COMMUNICATING AND THINKING 277

Nonverbal Communication 277 | Verbal Communication in Lower Animals 278 | Speech and the Brain 279 | The Structure and Meaning of Language 282 | The Learning of Concepts 285 | What Is Thinking? 288 | Images and Thinking 290 | Implicit Responses and Theories of Thinking 291 | Problem Solving: Trial and Error or Insight? 294 | Stages and Thinking in Problem Solving 297 | Factors Affecting Problem Solving 299 | Creativity 305 | Autism and Dreaming 307 | Summary 310, Exercises 312, Answers to Exercises 313, Selected References for Further Study 315

8. ABILITIES AND OTHER INDIVIDUAL DIFFERENCES 317

Overview of the Chapter 319 | Growth of Testing 319 | Ways of Classifying Tests 320 | Test Construction and Evaluation 323 | Reliability and Validity 331 | History and Definitions of Intelligence 333 | Current Individual Tests of Intelligence 335 | Group Intelligence Tests 340 | General Intelligence versus Specific Intelligences 343 | The Distribution of Intelligence 344 | Factors Related to Intelligence 348 | Special Abilities 353 | Standardized Achievement Tests 355 | Theories of Personality 355 | Methods of Measuring Personality 358 | Uses and Misuses of Tests 365 | Summary 367, Exercises 369, Selected References for Further Study 370

9. SOCIAL PSYCHOLOGY 373

Definition of Social Psychology 374 | Social Norms and Conformity 376 | Social Roles 380 | Social Status 382 | Leadership 385 | Group Structure and Communication 389 | Group Discussion and Group Dynamics 392 | Definitions and Measurements of Opinions

[x] CONTENTS

and Attitudes 398 | Attitude Change and Propaganda 403 | Social Prejudice 412 | Summary 417, Exercises 421, Selected References for Further Study 423

10. MENTAL DISORDERS AND THERAPY 425

History and Terminology 425 | Frustration, Anxiety, and Defense Mechanisms 431 | Psychophysiologic (Psychosomatic) Disorders 437 | Neuroses 438 | Psychoses 444 | Personality Disorders and Other Non-psychotic Mental Disorders 454 | Physical and Psychosocial Bases of Mental Disorders 456 | Physical Therapies 458 | Psychotherapy 461 | Summary 468, Exercises 470, Selected References for Further Study 472

Appendix A. A SHORT HISTORY OF PSYCHOLOGY

473

Psychology before the Twentieth Century 474 | Early Twentieth-Century Schools of Psychology 483 | Later Developments in the United States 488 | Summary 490, Exercises 492, Selected References for Further Study 493

Appendix B. AN INTRODUCTION TO PSYCHOLOGICAL STATISTICS 495

Statistical Description 495 | Statistical Inference 519 | Summary 530, Exercises 531, Selected References for Further Study 532

BIBLIOGRAPHY

533

INDEX 559