

Guide to Fundamental Definitions xiii

General References xv

Introduction 1

Chapter 1 States of a Model System 5

Chapter 2 Entropy and Temperature 27

Chapter 3 Boltzmann Distribution and Helmholtz
Free Energy 55

Chapter 4 Thermal Radiation and Planck Distribution 87

Chapter 5 Chemical Potential and Gibbs Distribution 117

Chapter 6 Ideal Gas 151

Chapter 7 Fermi and Bose Gases 181

Chapter 8 Heat and Work 225

Chapter 9 Gibbs Free Energy and Chemical Reactions 261

Chapter 10 Phase Transformations 275

Chapter 11 Binary Mixtures 309

Chapter 12 Cryogenics 333

Chapter 13 Semiconductor Statistics 353

Chapter 14 Kinetic Theory 389

Chapter 15 Propagation 423

Appendix A Some Integrals Containing Exponentials 439

Appendix B Temperature Scales 445

Appendix C	Poisson Distribution	453
Appendix D	Pressure	459
Appendix E	Negative Temperature	460
Index		465