

CONTENTS

Preface	v
Introduction	vii
Part I. Atomic and Molecular Physics	1
1. Atomic Physics (1001–1122)	3
2. Molecular Physics (1123–1142)	173
Part II. Nuclear Physics	205
1. Basic Nuclear Properties (2001–2023)	207
2. Nuclear Binding Energy, Fission and Fusion (2024–2047)	239
3. The Deuteron and Nuclear forces (2048–2058)	269
4. Nuclear Models (2059–2075)	289
5. Nuclear Decays (2076–2107)	323
6. Nuclear Reactions (2108–2120)	382
Part III. Particle Physics	401
1. Interactions and Symmetries (3001–3037)	403
2. Weak and Electroweak Interactions, Grand Unification Theories (3038–3071)	459
3. Structure of Hadrons and the Quark Model (3072–3090)	524
Part IV. Experimental Methods and Miscellaneous Topics	565
1. Kinematics of High-Energy Particles (4001–4061)	567
2. Interactions between Radiation and Matter (4062–4085)	646
3. Detection Techniques and Experimental Methods (4086–4105)	664
4. Error Estimation and Statistics (4106–4118)	678
5. Particle Beams and Accelerators (4119–4131)	690
Index to Problems	709