

CONTENTS

CHAPTER 1.	INTRODUCTION	1
CHAPTER 2.	THE ATOM	12
CHAPTER 3.	THE PROPERTIES OF GASES	20
CHAPTER 4.	CHEMICAL CHANGE	53
CHAPTER 5.	AVOGADRO'S HYPOTHESIS AND MOLECULES	73
CHAPTER 6.	EQUIVALENT WEIGHTS	87
CHAPTER 7.	ATOMIC WEIGHTS	96
CHAPTER 8.	FORMULAE AND EQUATIONS	115
CHAPTER 9.	THE CLASSIFICATION OF THE ELEMENTS	122
CHAPTER 10.	THE CONSTITUTION OF MATTER	133
CHAPTER 11.	THE OUTER SPHERE OF THE ATOM. VALENCY	147
CHAPTER 12.	NUCLEAR CHEMISTRY	162
CHAPTER 13.	SOLUTION AND CRYSTALLIZATION	178
CHAPTER 14.	PROPERTIES OF DILUTE SOLUTIONS	200
CHAPTER 15.	ELECTROLYSIS AND THE ELECTROLYTIC DISSOCIATION THEORY	216
CHAPTER 16.	THERMO-CHEMISTRY	236
CHAPTER 17.	CHEMICAL EQUILIBRIUM AND THE VELOCITY OF REACTIONS	242
CHAPTER 18.	THE APPLICATION OF THE LAW OF MASS ACTION TO ELECTROLYTES	262
CHAPTER 19.	THE COLLOIDAL STATE	277
CHAPTER 20.	HYDROGEN AND WATER	286
CHAPTER 21.	OXYGEN	331
CHAPTER 22.	CARBON	356
CHAPTER 23.	NITROGEN	422
CHAPTER 24.	SULPHUR	471
CHAPTER 25.	THE HALOGENS	522
CHAPTER 26.	THE ATMOSPHERE, INCLUDING THE INERT GASES	581
CHAPTER 27.	METALS	598
CHAPTER 28.	THE ALKALI METALS	608
CHAPTER 29.	COPPER, SILVER AND GOLD	647
CHAPTER 30.	THE ALKALINE EARTH METALS	684
CHAPTER 31.	ZINC, CADMIUM AND MERCURY	715
CHAPTER 32.	BORON, ALUMINIUM, GALLIUM, INDIUM AND THALLIUM	735
CHAPTER 33.	SCANDIUM, YTTRIUM, LANTHANUM, THE RARE EARTHS (LANTHANONS) AND THE TRANS-URANIUM ELEMENTS	757
CHAPTER 34.	SILICON TIN AND LEAD, AND OTHER ELEMENTS OF GROUP IV	766

CHAPTER 35.	PHOSPHORUS AND THE REMAINING ELEMENTS OF GROUP V	811
CHAPTER 36.	SELENIUM, TELLURIUM AND POLONIUM	862
CHAPTER 37.	CHROMIUM, MOLYBDENUM, TUNGSTEN AND URANIUM	866
CHAPTER 38.	THE MANGANESE GROUP	887
CHAPTER 39.	IRON, COBALT, NICKEL AND THE PLATINUM METALS	899
QUESTIONS		954
ANSWERS TO QUESTIONS		992
INDEX		994