

## CONTENTS

<i>List of Plates</i>		<i>page ix</i>
<i>List of Experiments</i>		<b>xi</b>
<b>Chapter 1</b>	<b>THE GASEOUS STATE</b>	<b>1</b>
<b>Chapter 2</b>	<b>THE LIQUID STATE</b>	<b>15</b>
	(a) Condensation of gases, p. 15. (b) Vapour pressure, p. 20. (c) Boiling, p. 25. (d) Liquid surfaces, p. 29.	
<b>Chapter 3</b>	<b>THE SOLID STATE</b>	<b>36</b>
	(a) Equilibrium between the liquid and solid states, p. 36. (b) The crystalline state, p. 38. (c) Polymorphism, p. 47. (d) Phase diagrams, p. 51.	
<b>Chapter 4</b>	<b>ATOMS AND MOLECULES</b>	<b>61</b>
	(a) The atomic theory, p. 61. (b) The relative weights of the atoms, p. 69. (c) Valency forces, p. 81.	
<b>Chapter 5</b>	<b>SOLUTIONS</b>	<b>87</b>
	(a) The vapour pressure of solutions, p. 87. (b) The boiling-point of solutions, p. 91. (c) The freezing-point of solutions, p. 94. (d) Osmosis, p. 99.	
<b>Chapter 6</b>	<b>ELECTRICAL PROPERTIES OF SOLUTIONS</b>	<b>108</b>
	(a) Electrical conductance of liquids, p. 108. (b) Specific and equivalent conductance, p. 117. (c) Migration of ions, p. 124. (d) Conductometric titrations, p. 131.	
<b>Chapter 7</b>	<b>ADSORPTION</b>	<b>134</b>
<b>Chapter 8</b>	<b>THE COLLOIDAL STATE</b>	<b>144</b>
	(a) Colloidal solutions, p. 144. (b) The stability of sols, p. 148. (c) Gels, p. 156. (d) Emulsions, p. 161.	
<b>Chapter 9</b>	<b>CHEMICAL CHANGE</b>	<b>164</b>
	(a) Thermochemistry, p. 164. (b) The effect of concentration on reaction rate, p. 168. (c) Temperature coefficient of reaction rates, p. 176. (d) Catalysis, p. 180. (e) Reversible reactions, p. 187.	

**Chapter 10 MASS ACTION AND THE IONIC  
DISSOCIATION THEORY** *page* **198**

(a) The strengths of acids, p. 198. (b) The common ion effect, p. 203. (c) Indicators, p. 207.

**Chapter 11 PHASE RELATIONS** **216**

(a) A gas and a liquid, p. 216. (b) Two liquids, p. 218. (c) Mixtures of a salt and water, p. 233. (d) Mixtures of two solids, p. 243. (e) The distribution law, p. 257.

**Chapter 12 ELECTROCHEMISTRY** **263**

(a) The electrochemical series of the metals, p. 263. (b) Voltaic cells, p. 270. (c) Single electrode potentials and concentration cells, p. 275. (d) Galvanic couples, p. 287.

**Bibliography** **291**

**Index** **293**