## **Contents**

1.	INTRODUCTION: WHAT IS GEOCHEMISTRY?	1
2.	SOME BASIC DATA ABOUT THE EARTH	3
	Mass. Radius. Surface. Mass distribution. Magnetic field. Age. Composition of the observable region. Heat flow. Seismic wave propagation.	
3.	THE COMPOSITION OF THE CRUST. MINERALS	8
	Minerals. General features of the atomic structure of minerals.	
4.	ROCKS	24
	Igneous rocks. Sedimentary rocks. Metamorphic rocks.	
5.	CHEMICAL COMPOSITIONS OF OBJECTS IN SPACE AND THE WHOLE EARTH	35
	Extraterrestial abundances. Composition of the earth. Element distribution in the earth. $P-T$ variation in the earth.	
6.	MINERAL REACTIONS—PHASE CHANGES	44
	Solid-solid reactions: phase changes. Solid-gas reactions. Isotope fractionation. Solid-melt equilibria. Melt-solid interactions. The phase rule. Kinetics.	
7.	HIGH-TEMPERATURE SOLUTIONS AND TRANSPORT	73
	Ore-forming processes.	
8.	THE ATMOSPHERE AND HYDROSPHERE	84
	The atmosphere. The hydrosphere. Composition of natural waters. Silica. Manganese. Barium. Chlorine. Sodium. Reducing conditions. Calcium carbonate. Evaporites.	
€.	EVOLUTION OF THE EARTH	98
	BIBLIOGRAPHY AND NOTES	102
	GLOSSARY	104
	INDEX	105