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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front matter -- Preface -- Contents -- Part I: Fundamental theory -- 1 An introduction to higher recursion theory -- 2 Hyperarithmetic theory -- 3 Admissibility and constructibility -- 4 The theory of 1 1-sets -- 5 Recursion-theoretic forcing -- 6 Set theory -- Part II: The story of Turing degrees -- 7 Classification of jump operators -- 8 The construction of 1 1-sets -- 9 Independence results in recursion theory -- Part III: Hyperarithmetic degrees and perfect set property -- 10 Rigidity and bi-interpretability of hyperdegrees -- 11 Basis theorems -- Part IV: Higher randomness theory -- 12 Review of classical algorithmic randomness -- 13 More on hyperarithmetic theory -- 14 The theory of higher randomness -- A Open problems -- B An interview with Gerald E. Sacks -- C Notations and symbols -- Bibliography -- Index -- Backmatter
Sommario/riassunto	This monograph presents recursion theory from a generalized point of view centered on the computational aspects of definability. A major theme is the study of the structures of degrees arising from two key notions of reducibility, the Turing degrees and the hyperdegrees, using techniques and ideas from recursion theory, hyperarithmetic theory, and descriptive set theory. The emphasis is on the interplay between recursion theory and set theory, anchored on the notion of definability.

The monograph covers a number of fundamental results in hyperarithmetic theory as well as some recent results on the structure theory of Turing and hyperdegrees. It also features a chapter on the applications of these investigations to higher randomness.