Contents

Preface	ix
Program of invited talks	xi
Conference participants	xii
Randomness in computability theory KLAUS AMBOS-SPIES AND ANTONÍN KUČERA	1
Open questions about the n -c.e. degrees Marat Arslanov	15
The theory of numberings: Open problems SERIKZHAN BADAEV AND SERGEY GONCHAROV	23
Π^0_1 classes — structure and applications Douglas Cenzer and Carl G. Jockusch, Jr.	39
The global structure of computably enumerable sets Peter A. Cholak	61
Computability theory in arithmetic: Provability, structure and techniques C. T. Chong and Yue Yang	73
How many Turing degrees are there? RANDALL DOUGHERTY AND ALEXANDER S. KECHRIS	83
Questions in computable algebra and combinatorics ROD DOWNEY AND J. B. REMMEL	95
Issues and problems in reverse mathematics HARVEY FRIEDMAN AND STEPHEN G. SIMPSON	127
Open problems in the theory of constructive algebraic systems SERGEY GONCHAROV AND BAKHADYR KHOUSSAINOV	145
Independence results from ZFC in computability theory: Some open problems	
Marcia Groszek	171
Problems related to arithmetic	
Julia F. Knight	181

viii CONTENTS

Embeddings into the computably enumerable degrees Manuel Lerman	191
Definability in the c.e. degrees: Questions and results ANDRÉ NIES	207
Strong reducibilities, again Piergiorgio Odifreddi	215
Finitely axiomatizable theories and Lindenbaum algebras of semantic classes Mikhail Peretyat'kin	221
Towards an analog of Hilbert's tenth problem for a number field ALEXANDRA SHLAPENTOKH	241
Natural definability in degree structures RICHARD A. SHORE	255
Recursion theory in set theory THEODORE A. SLAMAN	273
Extensions, automorphisms, and definability ROBERT I. SOARE	279
Open problems in the enumeration degrees Andrea Sorbi	309