

# Contents

<b>Introduction</b>	<b>vii</b>
<b>1 Basic notions</b>	<b>1</b>
1.1 Propositional languages . . . . .	1
1.2 Abstract algebras . . . . .	3
1.3 Preliminary lattice-theoretical notions . . . . .	6
1.4 Propositional logics . . . . .	19
1.5 Brief exposition of the most important propositional logics . . . . .	31
<b>2 Semantic methods in propositional logic</b>	<b>41</b>
2.1 Preordered sets . . . . .	41
2.2 Preordered algebras . . . . .	50
2.3 Logical matrices . . . . .	55
2.4 Adequacy . . . . .	63
2.5 Propositional logic and lattice theory . . . . .	75
<b>3 Completeness of propositional logics</b>	<b>91</b>
3.1 Generalized completeness . . . . .	91
3.2 Post-completeness . . . . .	97
3.3 The problem of uniqueness of Lindenbaum extensions . . . . .	105
3.4 Structural completeness . . . . .	112
3.5 Some related concepts . . . . .	120
<b>4 Characterizations of propositional connectives</b>	<b>131</b>
4.1 $C_n$ -definitions . . . . .	131
4.2 The system (D) . . . . .	133
4.3 Variants . . . . .	137
4.4 The system (I) . . . . .	141
4.5 Classical logic . . . . .	149
<b>Appendix A</b>	
<b>The fundamental metatheorem for the classical propositional logic</b>	<b>153</b>

<b>Appendix B</b>	
<b>A proof system for the classical logic</b>	<b>157</b>
<b>Bibliography</b>	<b>165</b>
<b>Notation</b>	<b>175</b>
<b>Index</b>	<b>177</b>