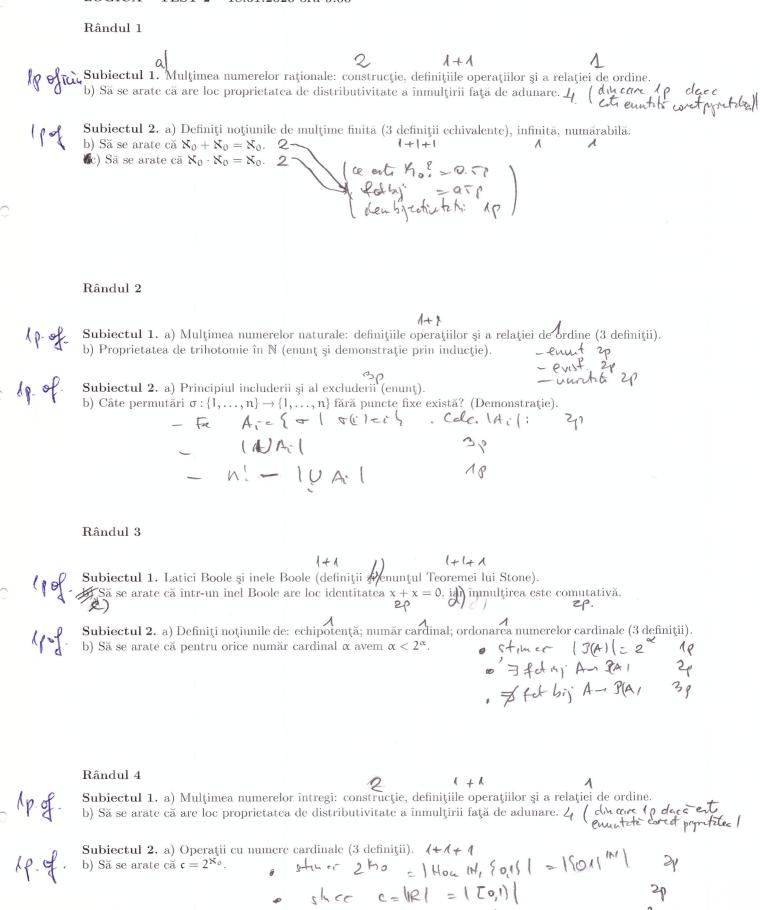
LOGICĂ - TEST 2 - 18.01.2020 ora 9:00



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0	Logic TEST $2-18$.	$01.2020,10:30\mathrm{AM}$
	Row 1	
ip of ch	a) Construction, defini	of rational numbers: (4) tions of the operations and of the order relation. nition of the addition does not depend on the choice of the representatives.
18 of de	finitions). b) Prove that for any o	the the following notions: equipotence; cardinal number; ordering cardinal numbers (3) cardinal number $\alpha = A $ we have $ P(A) = 2^{\alpha}$. The the following notions: $2^{\alpha} = A $ we have $ P(A) = 2^{\alpha}$. The the following notions: $2^{\alpha} = A $ we have $ P(A) = 2^{\alpha}$.
C		o defect SAI-15015 A X to XX (cher ful / 21)
	Row 2	
(bot		tions of the operations and of the order relation. \mathbb{Z} does not have divisors of zero (by using the fact that \mathbb{N} has no divisors of zero).
e (pof		ations with cardinal numbers (3 definitions). $= \mathfrak{c} \text{ (by using that } \mathfrak{c} = 2^{\aleph_0}). 24 \text{ L}$
×		
	Row 3	
(p.of	Question 1. The set of natural numbers: a) Definition and the Peano axioms (statement). b) Definitions of the operations and of the order relation on N. c) The division theorem in N (statement and proof).	
47	b) Prove that the set R	e the notions of finite set, infinite set (3 equivalent definitions), countable set. R of real numbers is not countable. (+3+1) (pres pin chand ca [o]) mu 2p) (obtherce controbate: 271
	Row 4	
Sta	Question 1. a) The latement of the theorem) b) Draw the Hasse diag	attice as an ordered set, and the lattice and an algebraic structure (definitions and the lattice are of the ordered set $(A,)$, where $A = \{0, 1, 2, 3,, 12\}$. Let $(A,)$ be a distributive lattice. The lattice $(A,)$ be a distributive lattice.
189	Question 2. Let $ A = k$ and $ B = n$, where $k, n \in \mathbb{N}$. a) How many injective functions $f: A \to B$ exist? (proof by induction) b) Let $f: A \to B$ an injective function. How many retracts (left inverses) has f? (proof).	