UNSW
SYDNEY

CANDIDATE

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TEST

Quiz 2

Subject code	--
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Question	Status	Marks	Question type
1.1	Correct	1/1	Multiple Response
1.2	Correct	1/1	Multiple Response
1.3	Correct	1/1	Numeric Entry
1.4	Correct	1/1	Multiple Response
1.5	Correct	1/1	Multiple Response
2.1	Correct	1/1	True / False
2.2	Correct	1/1	True / False
2.3	Correct	1/1	Multiple Response
2.4	Correct	1/1	Multiple Choice
2.5	Correct	1/1	True / False

1.1 Let A be the set {b,a,n,a,n,a} and B be the set {p,i,n,e,a,p,p,l,e}.

Which of the following are subsets of A⊕B?
Select all that apply

- [x] {b,p,i,e,p,p,l,e} ✓
- [ ] {p,p,p,a,a,n,n,e,e}
- [x] {b,p} ✓
- [x] {} ✓
- [ ] {a,n}
- [ ] {a,b,e,i,l,n,p}

1.2 Which of the following sets have exactly 6 elements? (Intervals are over ℕ)
Select all that apply

- [ ] [0,1] × (1,6)
- [ ] (0,1) × [1,6]
- [x] (0,2] × [1,4) ✓
- [x] [0,2] × (1,4) ✓
- [ ] None of the above

1.3 Let Σ={a,b}. Let w ∈ Σ* be the word abb, and let v ∈ Σ* be the word ba

What is length(vwv): 7 ✓ .

1.4 Let $\Sigma=\{c,u,p\}$ and $\Psi=\{s,a,u,c,e,r\}$

Which of the following words are in $\Sigma^* \setminus \Psi^*$?
Select all that apply

- [x] ppp ✓
- [ ] ccc
- [ ] saucer
- [x] cup ✓
- [ ] λ
- [ ] eee

1.5 Which of the following statements are true for all sets A, B, C?
Select all that apply

- [x] $(A \cup B) \setminus C = (A \setminus C) \cup (B \setminus C)$ ✓
- [ ] $(C \setminus A)^c = (C^c) \setminus (A^c)$
- [x] $(A \cup B) \cap A = A \cup (B \cap A)$ ✓
- [ ] $C \setminus (A \cup B) = (C \setminus A) \cup (C \setminus B)$
- [ ] $(A \oplus B)^c = (A^c) \oplus (B^c)$

2.1 True or false:
For all sets A and B, $A \cap B = A \cup B$ if and only if A=B

- False
- True ✓

2.2 True or false:
For all sets A,B,C:
$A \times (B \cap C) = (A \times B) \cap (A \times C)$

- False
- True ✓

2.3 Which of the following sets has cardinality less than or equal to 6?
Select all that appy:

- [x] $\{6\%n : n \in \mathbb{N} \text{ and } n>0\}$ ✓
- [ ] $\{n \in \mathbb{Z} : 6|n\}$
- [ ] $\{n \in \mathbb{Z} : n|6\}$
- [x] $\{n\%6 : n \in \mathbb{Z}\}$ ✓

2.4 Suppose A={0,1,2}

For how many sets $B \subseteq \mathbb{N}$ is it the case that $A \times B = B \times A$?
Select one alternative:

- 0
- 1
- 2 ✓
- 3
- Infinitely many
- None of the above

2.5 Let $\Sigma = \{0,1\}$.
True or false:
For all languages $X \subseteq \Sigma^*$: $(XX)^* = (X^*)(X^*)$

- False ✓
- True