

Examination in Cybersecurity

Matriculation number:

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Date:

XX.XX.XXXX

Duration:

90 min

Points achieved:

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Examiner:

Pavel Laskov

Matriculation number:

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Instructions

The time available for the exam is **90 minutes**. The total amount **of points is 90**.

Please keep the answer sheets stapled and write down your answers only on these sheets.

Keep your answers short and stick to what is exactly asked.

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1. Task 1 (10 points)

What is the difference between the monoalphabetic and the polyalphabetic substitution methods? What is the difference between substitution and permutation methods? How can permutation be applied to messages of arbitrary length?

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2. Task 2 (10 points)

Give definitions of flaws, vulnerabilities and exploits. Explain the main idea of an SQL injection attack. Consider the following Java code:

```
conn = getSQLConnection();  
Statement stat = conn.createStatement();  
ResultSet user = stat.executeQuery( "SELECT * FROM USER WHERE log_id='" + uname + "';" );
```

Identify a vulnerability in this code and show an exploit for this vulnerability.