

Written examination for the lecture E-Commerce in summer 2004.

Please fill in your name, student id, and the name of your curriculum. Note that readability is important.

**Name:**

**Student Id:**

**Name of curriculum:**

- At the end of the exam, please return all sheets including this one.
- If you receive additional pieces of paper from the supervisor, please write your name also on these pages, and add a page number.
- Please read every question carefully. Take care of the stated limitations for the length of your answer.
- You have 90 minutes for answering the questions.
- Additional resources are not allowed.

**Good Luck!**

**Question 1 (10 points)**

Draw and explain the 4-Phase transaction model for e-commerce.

**Question 2 (3+3+3 points)**

List and explain three business models for e-commerce.

**Question 3 (9 + 2 points)**

HTTP is often used even in B2B e-commerce scenarios where no user interacts with a system using HTML-based browser systems. List and discuss at least 3 reasons for the success of HTTP for web-based applications. What is added to TCP/UDP that makes HTTP attractive for e-commerce applications?

**Question 4 (4+4+4+4+4 points)**

Discuss advantages and disadvantages of the three-tier architecture commonly used in e-commerce applications. You are expected to explain at least 5 advantages or disadvantages (compare with the traditional client-server or mainframe approaches).

**Question 5 (2+2+2+4 points)**

In e-commerce scenarios one distinguishes several types of providers. Give a definition of the notions Internet service provider (ISP), service provider (SP), and application service provider (ASP), and explain the differences between each of the types of providers.

Are ASPs also interesting for larger companies which have their own IT infrastructure. Briefly justify your answer.

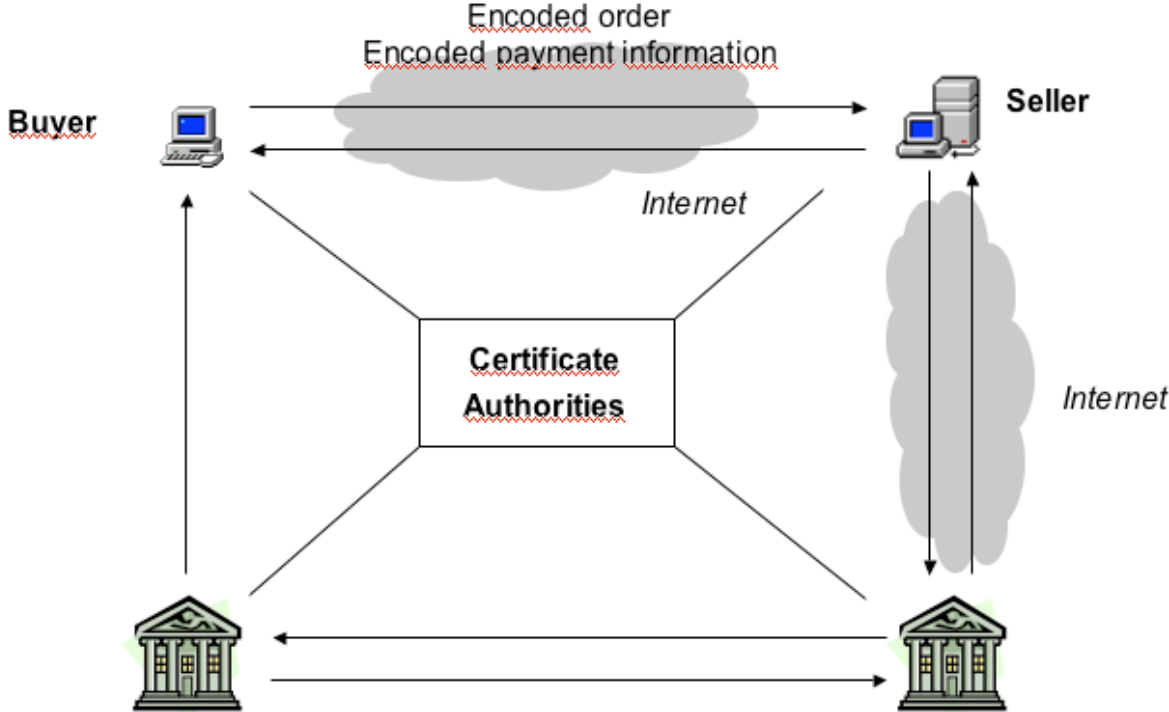
**Question 6 (5+5 points)**

Explain the use of digital signatures for e-commerce applications.

How can digital signatures be realized with RSA encryption techniques?

**Question 7 (20 points)**

Various proposals for payment protocols for electronic transactions exist. Below you see the main structure of SET (secure electronic transactions).



Provide missing labels for edges and nodes and explain the SET diagram. Discuss an example transaction, and add numbers to the edges in order to specify the sequence of substeps in the protocol. What is the role of Certificate Authorities?

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**Question 8 (5+5 points)**

Knowledge is now seen as central for the corporate success of a company. Explain the difference between explicit knowledge and implicit knowledge, and explain each of these notions.