T-110.5116 Computer Networks II - Advanced Features

Exam 07.01.2011
No written material allowed
Each question is worth 2 points
Duration 3h
Teacher: Matti Siekkinen

1. What is the difference between reactive and proactive schemes in store-carry-forward paradigm? Mention also briefly an example of both types of schemes.

2. Explain what is Host Identity Protocol's base exchange and how it works.

3. What is a zFilter and how is it used in PSIRP for delivering data? Explain just the basic operation without enhancements.

4. What are the problems of common TCP (Reno) with wireless networks and how can they be tackled by the transport protocol? Explaining one problem well is sufficient.

5. Compare DCCP to UDP and TCP.

6. How can application level techniques be used to improve QoS in multimedia streaming?

7. Describe the performance issues (at least one) that TCP might suffer from specifically in data center networks and explain why they occur.

8. When a mobile device transmits data using TCP over an 802.11g access network, is the energy utility (defined as bits transmitted per Joules consumed) dependent on the throughput achieved or not? Justify your answer.

9. What are network black holes and how can they be diagnosed and located? Just explain the core idea without going into details.

10. Why is clustering used in wireless sensor networks?