

T-110.5111 Computer Networks II - Advanced Features

Exam 17.12.2012

No written material allowed

Each question is worth 2 points

Try to keep your answers brief and to the point.

Justify your answers.

Duration 3h

Teacher: Matti Siekkinen

1. What are message ferries in DTN and why are they useful?
2. When and why is non-persistent addressing problematic with TCP/IP protocol suite? Give at least two examples.
3. Describe the components of a wireless sensor node with focus on energy consumption. Based on that, discuss how networking protocols can improve the network lifetime.
4. Is TCP a fair protocol?
5. What is network tomography and why is it necessary? Just explain the core idea, not algorithm details.
6. Is it currently possible to guarantee a certain quality of service for Internet applications?
7. Outline the different communication phases of the Bluetooth standard from the time a (slave) device intends to join a piconet to the time it can start to exchange data with the master.
8. Discuss the necessity of measurements and modeling of power consumption in optimizing energy consumption of mobile devices.
9. Outline the multiple access mechanism used in 802.11 infrastructure mode.
10. What are the main implications of using a specific kind of data center network architecture? Name at least two.