

T-110.5111 Computer Networks II - Advanced Features

Exam 03.01.2013

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

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1. Explain the difference between *space path (SP)* and *space/time path (S/TP)* in wireless mobile networks. Which are the key factors that determine the type of paths (SP or S/TP) that exist in a given network?
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. Explain what is *tail energy* in wireless communication and its importance for 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.