

S-72.3235 Network Access 3 cr

Exam 24.10.2011

Part A: Closed book tasks (2 tasks)

The examination consists of two parts. When you have done the tasks in Part A (closed book) you should give the answers to the exam supervisor, and then you will get Part B (open book) including 4 problems, out of which 3 best will be graded. You are allowed to use any literature that you feel useful in part B.

You can decide yourself the time you spend with each part, but the total exam duration is 3 h. You can leave the exam room 1 hour after the exam start.

You can answer in Finnish, Swedish or English.

Problem A.1

- a) What is the difference between numerically solving an equation describing the performance of a protocol and computer simulation of the protocol performance? (4 p)
- b) Discuss the issues affecting the performance of the MAC protocols in wireless systems. (6 p)

Problem A.2

Consider a case, in which two operators need to share a bandwidth of 50 MHz. They have three options i) each operator gets 25 MHz exclusive band, ii) they set up joint venture to operate the network hardware and act as virtual operators, iii) they use contention based access to share the spectrum. What are the pros and cons of the three spectrum sharing methods from the MAC performance point of view? (10 p)