

Wireless Local Area Networks, spring 2005. Final test. 31.3.2005 8:00-12:00 at SL.

You can make FINAL EXAM, 1. TEST, 2. TEST, or BOTH 1. AND 2. TESTS. You can't retake 1. and 2. tests, so if you already have made 1. or 2. test, YOU CAN'T RETAKE IT NOW! You also can't make FINAL EXAM and (1. OR 2.) TEST AT THE SAME TIME. You have 4 hours for final exam, 2 hours for 1. test, and 2 hours for 2. test.

1. Write everything you know and understand about your practical assignment. (1. practical assignment of LAN course, that is mandatory for everyone) (10p)

2. Let's create 4-byte sequence S_i , which consist of numbers from zero to three:

$$\begin{array}{cccc} S_i = & 0 & 1 & 2 & 3 \\ & S_0 & S_1 & S_2 & S_3 \end{array}$$

We also create 4-byte keysequence K_i , where we repeat the key as long as K_i is full (let's select bytes 2 and 5):

$$\begin{array}{cccc} K_i = & 2 & 5 & 2 & 5 \\ & K_0 & K_1 & K_2 & K_3 \end{array}$$

Generate encryption key S_t . Encrypt text "HI" ("H" is 01001000 and "I" is 01001001 in binary form). Decrypt text in the receiving end and check that you got the same "HI" that was sent! (11p)

3. How IEEE WLAN standards 802.11, 802.11a, 802.11b and 802.11g work and how do they differ from each other? Compare standards and write both good and bad things about each of them. Also write everything you know about 802.11n standard. (11p)

4. What WPA, WPA2 and WMM are? How do they work? What benefits do they offer to WLANs? (11p)

5. What does Site Survey mean? What are the general areas that Site Survey should focus? Describe how Site Survey can be accomplished in large company. (11p)

You can use pencil, rubber and student-card.