Master’s in Embedded Systems: Wireless Sensor Network

Homework Assignment 2 (50 Points)

Due on 02/21/2005. No late submissions will be accepted. No plagiarism.


2. Distinguish between TDMA, SMAC and TMAC protocols? (10 Points)

3. The total amount of energy consumed is an important energy metric in wireless sensor networks. Similarly network lifetime is also an important metric. How will you define the lifetime of a wireless sensor network, and how will multi-hop routing affect the lifetime of a wireless sensor network? Explain with an example. (10 points)

   a) Define sleep deprivation attack in WSNs? (5 Points)
   b) Distinguish between end to end and link layer security? (5 Points)

5. To answer these questions use "A Transmission Control Scheme for Media Access in Sensor Networks" by Alec Woo, and David Culler published in proceedings of Mobicom 2001"
   a) Why is introducing a random delay before a node’s transmission important in WSNs? (5 Points)
   b) Is it possible to detect collisions in wireless sensor networks? Justify your answer. (5 Points)