ECE8863: SENSOR NETWORKS
SPRING 2008

EXAM: MARCH 26, 2008

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THIS IS AN OPEN BOOK TEST!!
EVERYTHING IS ALLOWED EXCEPT LAPTOPS.
ALL QUESTIONS HAVE THE SAME WEIGHT.
PLEASE WRITE YOUR NAME AND CODEWORD ON EVERY SHEET!!!

QUESTION 1.
  a) **Why can't IP addressing mechanism be used for wireless sensor networks?**
  b) **What are the communication/protocol issues to be considered when you integrate/connect Internet (IP) as backbone to sensor networks?**
  c) **Why is there no existing reference protocol architecture for wireless sensor networks?**

QUESTION 2.
  a) **What is your criticism of the ESRT scheme?**
  b) **What type of applications are well-suited for ESRT?**

QUESTION 3.
  a) **ESRT exploits spatial correlation at the transport layer. Is it possible to exploit spatial correlation at the routing layer? How? Briefly explain.**

  b) **Which applications are not well-suited for Directed diffusion routing algorithm?**
  c) **In LEACH we use signal strength to create clusters. Give two more ways how clusters could also be formed otherwise!**
  d) **What is your criticism of the Melodia/Pompili/Akyildiz geographical routing algorithm?**

QUESTION 4.

a) What is Error Resiliency and how can error resiliency be exploited in WSNs?

b) The Vuran/Akyildiz Error Control paper states that the most suitable Error Control scheme depends on the hardware. As an example, ARQ is more suitable for Mica2 while FEC is more suitable for MicaZ when energy consumption is considered. Explain the reasoning behind this difference briefly.

QUESTION 5.

a) How is it multilateration technique performed?

b) What are the requirements? What are the limitations?