Assignment 6

1)Design a network that allows me to have 54 Mbps data access from my cell phone in a rural area.

or use WiMax protocol w/ access points 30 miles apart

can't really do it today, but to try:

If 802.16 protocol is used, only need access pt every 10km →

1) add 802.11b protocol ≡ wifi access points spaced 100m apart
2) keep GPRS or GSM cell phone network infrastructure as is
3) design new cell phones that handle both networks in parallel, asynchronously as separate processes

2)Explain why your description in Question 1 does not exist in the real world today (besides the obvious cost of deployment issue).

1) no dual mode cell phones exist
2) too many access pts for the small # of users
3) seemless roaming isn't so seemless

3)Explain what you need to use for a data acquisition system that requires mutual exclusion of memory access to data sent between processes via remote invocation, and why you need these items.

1) semaphores to protect mutual exclusion
2) message queues and message buffers to handle synchronization
3) global flag or another semaphore to tell other process to wait for receipt of message by process

4)What are the pros and cons of using RFID tags. Make sure one of your reasons has to do with inductive coupling.

cons

1) need proximity of source and tag
2) coupling may fail if two circuits unproperly tuned (L_1 vs L_2)

pros

1) can search entire stockroom from one spot
2) can provide secret coding with tag

5)What is the most fundamental requirement of a real-time system?

meeting all task deadlines