2006「無線通訊網路」 期末考

1. Please draw the hardware architecture of the GSM system. Also give a short description for each hardware component that is included in the GSM architecture. [15 points]

2. Please describe the logical channels defined in the GSM systems. Give a short description for the usage of each type of logical channels. [14 points]

3. Please draw the hardware architecture of the GPRS system. Compared that to the GSM system, what hardware components are absent from the GSM? Also give a short description for each hardware component that is included in the GPRS architecture but not in the GSM architecture. [15 points]

4. Please give four major differences between GSM and GPRS in terms of traffic, switching, charging, and bandwidth. [12 points]

5. Explain how do the IFS and backoff procedure work in the IEEE 802.11. [14 points]

6. What is a piconet? What is a scatternet in Bluetooth? Draw pictures and give description to each of the question. [10 points]

7. Please explain how the following protocols work in pseudo-code format. (Also, draw chart/figure to make your explanation more clearly.) [20 points]

   (a) Aloha
   (b) 1-persistent CSMA
   (c) CSMA/CD
   (d) CSMA/CA