Sample Questions on Wireless and Mobile Networks

1) Consider the single-sender CDMA example in Figure 6.5 of the textbook. What would be the sender’s output (for the 2 data bits shown) if the sender’s CDMA code were \((1, -1, 1, -1, 1, -1, 1, -1)\)?

2) Consider sender 2 in Figure 6.6 of the textbook. What is the sender’s output to the channel before it is added to the signal from sender 1, \(Z_{2,i,m}^2\)?

3) Suppose that the receiver in Figure 6.6 of the textbook wanted to receive the data being sent by sender 2. Show that the receiver is indeed able to recover sender 2’s data from the aggregate channel signal by using sender 2’s code.

4) Why are acknowledgements used in 802.11 but not used in wired Ethernet?

5) Describe the role of the beacon frames in 802.11.

6) Suppose the correspondent in Figure 6.22 of the textbook were mobile. Sketch the additional network-layer infrastructure that would be needed to route the datagram from the original mobile user to the (now mobile) correspondent. Show the structure of the datagram(s) between the original mobile user and the (now mobile) correspondent, as in Figure 6.23.