Review questions – Second Half of the course

1. Which Rate Sets and Multiplex options are defined for the Reverse Traffic Channels?

The same than for the Forward Traffic Channel: Rate Set 1 (9600 bps, 4800 bps, 2400 bps, and 1200 bps) and Multiplex Option 1 for the 8 kb vocoders; and Rate Set 2 (14400 bps, 7200 bps, 3600 bps, and 1800 bps) and Multiplex Option 2 for the 13 kb vocoders.

2. What is the Reverse Traffic Channel Preamble, and what is it used for?

The Reverse Traffic Channel Preamble consists of the first few frames a mobile station transmits on the Reverse Traffic Channel. These frames consists of all zeroes, are sent with a 100% transmission duty cycle. They are sent by the mobile station to help the base station acquire the Reverse Traffic Channel.

3. What is the modulation symbol rate input to the Orthogonal Modulation step, what is the chip rate out, and how does this rate change happen?

28.8 ksps in, 307.2 kcps out. Every six modulation symbols are interpreted as a Walsh index (0-63), and they are replaced by the corresponding 64-bit Walsh code.

4. What is a "power control group"?

A power control group is each one of the sixteen 1.25 ms segments into which a 20 ms Reverse Traffic Channel frame is subdivided

5. Define the three roaming states in which a mobile station can be found.

Home - the mobile station is in its "home" location (not roaming),
NID roaming - the mobile station is within a foreign NID but in the home SID, and
SID roaming - the mobile station is within a foreign SID.

6. Which parameters participate in the Reverse Open Loop Power Output estimation, and where do they come from?

INIT_PWR, NOM_PWR,and NOM_PWR_EXT. They are sent by the base station to the mobile stations in the Access Parameters Message, on the Paging Channel.

7. What happens during Reverse Outer Loop Power Control?

The BSC monitors, and adjusts if necessary, the “setpoint” used by the BTS’s to generate the power-up/power-down commands for the mobile stations. It does that based on the Frame Error Rate for that mobile station measured at the base station.

8. How is the Candidate Set initialized?

It is initialized to contain no pilots.

9. How does the mobile station react to power control during soft handoff?

If all the power control subchannels it is listening to send power-up commands, it increases transmit power, but if just one of them sends a power-down command, it decreases power.

10. Identify the message sent by the mobile station to report the strength of the pilots it measures

The Pilot Strength Measurement Message.