TUTORIAL 3

Q1.Gsm uses a frame structure where each frame consists of 8 time slots,and each time slot contains 156.25bits and data is transmitted over a channel at 270.833kbps.Find time duration of a TDMA frame ; and how long must a user wait when occupying a single time slot between two successive transmissions.

Q2. GSM uses the RPE-LTE speech coder in which the encoding is done on blocks of samples of 20ms duration(260 bits of coder output).The most significant first 50 bits(Class la) are appended with 3 CRC bits, the next 132 bits (Class lb) are appended by 4 tail bits and concatenated with the first error-protected bots.This block is then convolutionally encoded with a rate 1/2 FEC coder, and then concatenated with last 78 bits(Class II).Show that the achievable gross channel data rate is 22.8kbps.

Q3.How is power control mechanism different in IS-95,Cdma2000,W-CDMA?

Q4. How does OFDM minimise the impact of frequency selective fading.

Q5. What is meant my term multirate in W-CDMA.

Q6. What is the main advantage of using multicarrier modulation?