

EITP30: Quiz 1

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1. Who writes the LTE/NR technical specifications?
 - 3GPP
 - ITU
 - GSMA
2. An analog signal composed of two frequency components is sampled in a digital receiver. The components are orthogonal if:
 - Components of different frequencies are always orthogonal
 - It depends on the frequency difference, sampling rate and number of samples
 - It depends on the frequency difference and sampling rate
3. OFDM allows to?
 - Multiplex multiple complex symbols in the same time and frequency
 - Multiplex multiple complex symbols in different times and same frequency
 - Multiplex multiple complex symbols in the same time and different frequencies
4. A received signal has 1MHz bandwidth with total power 5mW, while the noise power spectral density is 1nW/Hz. The corresponding SNR is:
 - 10
 - 7dB
 - 3dB
5. The maximum FFT size in LTE is:
 - 1024
 - 2048
 - 4096
6. Apart from simplifying equalization of received OFDM signals, the Cyclic Prefix:
 - Mitigates the effect of channel delay spread
 - Mitigates interference between subcarriers (ICI)
 - Increases the throughput
7. PAPR in OFDM signals:
 - Requires to back-off (attenuate) the transmitted signal prior to amplification
 - Helps mitigate inter-symbol-interference
 - Is typically compensated at the receiver
8. What technology is used for LTE UL (uplink)?
 - OFDM
 - SC-FDMA
 - CDMA
9. What is the main purpose of standardization?
 - To test products before putting them on the market
 - To improve technology
 - To ensure interoperability between products from different companies
10. In an FDD cellular system?
 - Downlink and uplink share the same frequency but different times
 - Downlink and uplink operate at different frequencies and times
 - Downlink and uplink operate simultaneously using different frequencies