

Name and Surname _____

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Physical layer models and techniques for software radio

Wed, 3-July-2019

Tick the correct answer:

- 1. If a transmitter sends a pure carrier (sinusoidal) signal over a multipath wireless channel**
 - The received sinusoidal signal will always have the same carrier
 - The received signal will have always a sinusoidal shape
 - The received signal power can vary significantly in time
 - Don't know
- 2. Time coherence of a channel**
 - Defines the time range in which phase is coherent
 - Defines time range in which a channel is stationary
 - Has a limited low value in time invariant channels
 - Don't know
- 3. In the rain model of a channel**
 - Attenuation is a complex variable
 - Attenuation is a random variable
 - Attenuation is described by a lowpass equivalent time variant pulse response
 - Don't know
- 4. Doppler spread and delay spread**
 - Are second order statistical multipath channel properties
 - Are not necessary to define a rake receiver model
 - Are the inverse of each other
 - Don't know
- 5. Diversity concept can be directly associated with**
 - Transmitting multiple bits from a multimedia source
 - Transmitting the same information on multiple subchannels of a bandpass signals
 - Transmitting multi user signals in a bandpass channel
 - Don't know
- 6. Orthogonality in OFDM**
 - Is among modulated signal carriers
 - Is among user codes
 - is only between the in phase and the quadrature component of the multicarrier signal
 - Don't know
- 7. A bank of analog M-QAM demodulators in a OFDM receiver**
 - Is difficult to be managed for time-frequency synchronization issues
 - Provides a consolidated alternative in current modbile devices to IFFT chips
 - Is the optimal way to realize a OFDM transmitter
 - Don't know
- 8. A Viterbi receiver for multiuser CDMA**
 - Has a lower computational complexity that MMSE receiver
 - Does not use all multiuser codes at the receiver stage

- Is optimal for eliminating MUI in DS CDMA transmissions
- Don't know

9. A conventional receiver on DS CDMA

- Is optimal for MUI detection
- Is optimal for single user detection with Gaussian noise
- Is slower than a Viterbi receiver
- Don't know

10. Orthogonality among codes in uplink in asynchronous CDMA

- Is obtained through codes generated by one shift register
- is obtained by using single Maximum Length codes
- Is obtained through codes generated by two shift registers
- Don't know