

RTDC\_T5\_PRUEBA\_DE\_CLASE\_CURSO\_2022\_MANAÑAS

Volver a la Lista de Exámenes

Parte 1 de 1 / 10.0 Puntos

Preguntas 1 de 9

1.0 Puntos

For an OFDM signal using  $N_{sc}$  subcarriers the generation via IDFT requires:

- ☐ A.  $1/N_{sc}$  coefficients per subcarrier
- ☒ B. 1 coefficient per subcarrier
- ☐ C.  $N_{sc}$  coefficients per subcarrier
- ☐ D. None of the above is correct

Respuesta correcta:B

Preguntas 2 de 9

1.0 Puntos

To recover the information carried by an  $N$  channel OFDM symbol  $r_m$  of duration  $T$  its analog waveform  $r(t)$  has to be sampled at a rate  $N/T$

- ☒ Verdadero
- ☐ Falso

Respuesta correcta:Verdadero

Preguntas 3 de 9

1.0 Puntos

The addition of a cyclic prefix is enough to compensate for the effects of chromatic dispersion in an ODFM system.

- ☐ Verdadero
- ☒ Falso

Respuesta correcta:Falso

Preguntas 4 de 9

1.0 Puntos

Choose the correct statement related to OFDM systems

- ☒ A. The symbol period is grater than the DFT observation period
- ☐ B. The symbol period is smaller than the DFT observation period
- ☐ C. The symbol period is equal than the DFT observation period
- ☐ D. The guard interval is samller than the maximum delay between subcarriers in the composed signal

Respuesta correcta:A

Preguntas 5 de 9

2.0 Puntos

Select the correct statements (more than one) related to coherent OFDM systems:

- ☐ A. They always need to transport an In-phase and quadrature components
- ☒ B. Thay can transport only an in-phase, a quadrature or both I-Q depending on the subcarrier modulation format we need.
- ☒ C. Can reach over 1 Tb/s bit rate if I-Q is employed
- ☒ D. Can me employed in short-distance and access networks

Respuesta correcta:B, C, D

Preguntas 6 de 9

1.0 Puntos

A Nyquist optical communication systems uses non overlapping rectangular pulses in the time domain

- ☐ Verdadero
- ☒ Falso

Respuesta correcta:Falso

Preguntas 7 de 9

1.0 Puntos

For OFDM and Nyquist optical communications one wishes to eliminate ISI and ICI effects. Todo do this:

- ☐ A. One needs to encode the pulses in the time and frequency domain using sinc functions
- ☐ B. One needs to encode the pulses in the time and frequency domain using square functions
- ☐ C. one only needs to insert a cyclic preamble and a postamble in the transmitted pulses
- ☒ D. One needs for the sample "i" of channel "k" to achieve a double kronecker delta performance with respect to the sampling time slot i' and the frequency of the decoded channel k' at the receiver.

Respuesta correcta:D

Preguntas 8 de 9

1.0 Puntos

OFDM and Nyquist communication systems achieve a higher degree of spectral efficiency acting over the transmitted constellations

- ☐ Verdadero
- ☒ Falso

Respuesta correcta:Falso

Preguntas 9 de 9

1.0 Puntos

In an OFDM system, if proper pulse shaping is implemented and a cyclic premable/postamble included then, the transmitted symbol is recovered without requiring any further correction

- ☒ Verdadero
- ☐ Falso

Respuesta correcta:Verdadero