Inicio
Guía Docente
Recursos
Espacio compartido
Tareas
Exámenes
Calificaciones
Sondeos
Calendario
Anuncios
Correo interno
Foros
Chat
O365
Videoapuntes
Participantes
Información del sitio

EXÁMENES

Enlace

RTDC_T2_PRUEBA_EXTERNA - GRUPO MAÑANA

Volver a la Lista de Exámenes

Parte 1 de 1 - 10.0 / 10.0 Puntos

Preguntas 1 de 10	1.0
1.0 Puntos	

An information signal *x(t)* carried by electromagnetic waves and limited to a bandwidth of *W* (Hz) is characterized by (two correct answers):

- [x] A. Requiring a sampling rate of 2W for digitization and signal recovery
- [ ] B. A complex-valued analog function of time
- [x] C. A real analog function of time
- [ ] D. Requiring a sampling rate of W for digitization and signal recovery

Preguntas 2 de 10	1.0
1.0 Puntos	

The In-phase and Quadrature components of an equivalent low-pass envelope $x_b(t)$ of $x(t)$ are complex-valued signals.

- ( ) Verdadero
- (•) Falso

Preguntas 3 de 10	1.0
1.0 Puntos	

Select two correct statements regarding information channel bandwidths and rates:

- [x] A. The symbol rate R_s only depends on the sampling time T and not on the characteristics of the pulse encoding the symbol used to transport it.
- [ ] B. The channel bandwidth plus the signal spectral support defines the guardband
- [ ] C. The symbol rate R_s depends both on the sampling time T and on the characteristics of the pulse encoding the symbol used to transport it.
- [x] D. If the symbol is encoded using a square pulse then the symbol rate R_s equals the signal spectral support W.

Preguntas 4 de 10	1.0
1.0 Puntos	

A channel encoder takes 15 input bits to generate 16 output bits. It then maps the output bits into a discrete set of values from a constellation of size 4. Choose the two correct statements:

- [ ] A. The number of information bits per coded symbol is 0.469
- [ ] B. The code percentage is 93,3%
- [x] C. The code percentage is 6.7%
- [x] D. The number of information bits per coded symbol is 1.875

Preguntas 5 de 10	1.0
1.0 Puntos	

Pulse para ver instrucciones adicionales

For an input alphabet $X=(x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8)$ we have $p(x_1)= p(x_2)= p(x_3)= p(x_4)=1/16$, $p(x_5)=p(x_6)=1/8$, $p(x_7)=p(x_8)=1/4$. its entropy is H(X)= 2.75

Preguntas 6 de 10	1.0
1.0 Puntos	

For a complex-input/complex output channel featuring channel bandwidth of 10 GHz, a symbol period of 10^{-9} sec and Signal to Noise Ratio, *SNR= 20 dB* at the receiver choose two correct statements:

- [x] A. The spectral efficiency in bits/sec/Hz of 0.66.
- [x] B. The capacity in bits per symbol is 6.66 and the capacity in bits/sec is 6.66×10^9.
- [ ] C. The spectral efficiency in bits/sec/Hz of 1.
- [ ] D. The capacity in bits per symbol is 10 and the capacity in bits/sec is 10^{10}.

Preguntas 7 de 10	1.0
1.0 Puntos	

Which two of the following constellations verify that $\log_2 M=3$?

- [ ] A. 2-ASK/2-PSK
- [ ] B. QPSK
- [x] C. 2-ASK/4-PSK
- [x] D. 4-ASK/2-PSK

Preguntas 8 de 10	1.0
1.0 Puntos	

The two correct answers for the preceeding question identify constellations using the two quadrature components of the field?

- ( ) Verdadero
- (•) Falso

Preguntas 9 de 10	1.0
1.0 Puntos	

Choose two correct statements

- [x] A. In terms of Bit Error Rate, single quadrature constellations perform worse for the same value of SNR per symbol than two quadrature constellations.
- [ ] B. In terms of Bit Error Rate, single quadrature constellations perform worse for the same value of SNR per bit than two quadrature constellations.
- [ ] C. In terms of Bit Error Rate, single quadrature constellations perform equal for the same value of SNR per symbol than two quadrature constellations.
- [x] D. In terms of Bit Error Rate, single quadrature constellations perform equal for the same value of SNR per bit than two quadrature constellations.

Preguntas 10 de 10	1.0
1.0 Puntos	

Pulse para ver instrucciones adicionales

The maximum capacity in bits per symbol of a QAM-256 constellation is 8