University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and TeleCommunication Engineering
Curriculum Scheme: Rev 2012
Examination: Third Year Semester VI
Course Code: ETC 601 and Course Name : Digital Communication

Time: 1 hour   Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	When Information increases then
Option A:	Probability also increases
Option B:	Probability has no relation with information
Option C:	Probability remains constant
Option D:	Probability decreases
Q2.	The channel capacity is_____
Option A:	The amplitude of the modulated signal
Option B:	information contained in a signal
Option C:	The maximum information transmitted by one symbol over the channel
Option D:	Rate of loss of Information
Q3.	For 'M' equally likely messages, the average amount of information 'H' is
Option A:	H = log10 (M)
Option B:	H = log2 (M)
Option C:	H = log10 (M+1)
Option D:	H =2 log10 (M)
Q4.	Eye pattern is used to study
Option A:	ISI
Option B:	ITI
Option C:	IIS
Option D:	IIT
Q5.	The method in which small amount of controlled ISI is introduced into the data stream rather than trying to eliminate it completely is called as
Option A:	Duobinary signalling
Option B:	UnCorrelative coding
Option C:	Postcoding
Option D:	Sampling
Q6.	Roll - off factor is defined as
Option A:	The bandwidth occupied beyond the Nyquist Bandwidth of the filter
Option B:	The performance of the filter or device
Option C:	Aliasing effect
Option D:	Nyquist Bandwidth of the filter
Q7.	Matched filter may be optimally used only for
Option A:	Gaussian noise

Option B:	Transit time noise
Option C:	Flicker noise
Option D:	Thermal Noise
Q8.	A system is said to be better if its probability of error is
Option A:	Minimum
Option B:	Maximum
Option C:	Infinite
Option D:	Finite
Q9.	QPSK is a
Option A:	Two level modulation
Option B:	Three level modulation
Option C:	One level modulation
Option D:	Multilevel modulation
Q10.	What is the bandwidth for binary PSK
Option A:	5fb
Option B:	4fb
Option C:	3fb
Option D:	2fb
Q11.	What type of modulation require for BPSK
Option A:	Two level
Option B:	Four level
Option C:	Three level
Option D:	One level
Q12.	What is the radius of the circle in M-ary PSK on which message points are equally spaced?
Option A:	$\sqrt{Es}$
Option B:	$\sqrt{Eb}$
Option C:	Eb
Option D:	Es
Q13.	The BPSK signal has +V volts and -V volts respectively to represent
Option A:	1 and 0 logic levels
Option B:	11 and 00 logic levels
Option C:	10 and 00 logic levels
Option D:	01 and 00 logic levels
Q14.	Bandwidth of QPSK____ as compared to BPSK
Option A:	Double
Option B:	Half
Option C:	Same
Option D:	Four times

Q15.	The code in convolution coding is generated using
Option A:	OR logic
Option B:	EX-NOR logic
Option C:	AND logic
Option D:	MODULO-2 addition
Q16.	For a 1/2 rate , K=3 covolution code the number of input and output bits are?
Option A:	1 input bit and 3 output bits
Option B:	1 input bit and 2 output bits
Option C:	2 input bits and 3 output bits
Option D:	3 input bits and 2 output bits
Q17.	Which of the following is not a method to represent convolution code?
Option A:	Code trellis
Option B:	State diagram
Option C:	Linear matrix
Option D:	Tree diagram
Q18.	The received code contains an error if the syndrome vector is
Option A:	Zero
Option B:	Non zero
Option C:	Infinity
Option D:	Minus
Q19.	For hamming distance dmin and number of errors S, the condition for receiving invalid codeword is
Option A:	$S \leq dmin + 1$
Option B:	$S \leq dmin - 1$
Option C:	$S \leq 1 - dmin$
Option D:	$S \leq dmin$
Q20.	Syndrome is calculated by
Option A:	HT/r
Option B:	rH^T
Option C:	rH
Option D:	H
Q21.	For a (6,4) block code where n = 6, k = 4 and dmin = 3, how many errors can be corrected by this code?
Option A:	0
Option B:	1
Option C:	2
Option D:	3
Q22.	Viterbi algorithm performs _____decoding of convolution codes.
Option A:	Minimum mean square
Option B:	Maximum a Posteriori
Option C:	Minimum Square

Option D:	Maximum Likelihood
Q23.	A DSSS system has processing gain of 600 .The desired error probability is 10-5 and Eb/No = 6.45. The jamming margin will be equal to --- Db
Option A:	16.78
Option B:	19.7
Option C:	18.87
Option D:	1.887
Q24.	The jammer which monitors a communicator's signal is known as
Option A:	Frequency follower jammers
Option B:	Frequency repeat jammers
Option C:	Repeat back jammers
Option D:	Frequency follower & Repeat back jammers
Q25.	For maximal length sequence, the sequence repetition clock pulses p is given by-----
Option A:	2n + 1
Option B:	2n
Option C:	2n -1
Option D:	2n+p

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	C
Q3.	B
Q4	A
Q5	A
Q6	A
Q7	A
Q8.	A
Q9.	D
Q10.	D
Q11.	A
Q12.	A
Q13.	A
Q14.	B
Q15.	D
Q16.	B
Q17.	C
Q18.	B
Q19.	B
Q20.	B
Q21.	B
Q22.	D
Q23.	B
Q24.	D
Q25.	C