Program: **BE Electronics &Telecommunication Engineering**

Curriculum Scheme: **Revised 2016**

Examination: **Third Year** Semester **V**

Course Code: **ECC502** 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.	The rule or functional relationship which assigns real value to non-numerical value of sample space of random experiment is called as_____
Option A:	Random Experiment
Option B:	Random Variable
Option C:	CDF
Option D:	PDF
Q2.	A random variable X can take only two values, 2 and 4 i.e., P(2) = 0.45 and P(4) = 0.97. What is the Expected value of X?
Option A:	3.8
Option B:	2.9
Option C:	4.78
Option D:	5.32
Q3.	Calculate the rate of information if message rate is 4K message/sec and average information per message is 1.18 bits/message
Option A:	a) 4702 bits/sec
Option B:	b) 4720 bits/sec
Option C:	c)7420 bits/sec
Option D:	d)7420 bits
Q4.	In Huffman's coding algorithm, newly generated symbols are arranged in second column in order of probabilities.
Option A:	a) Random
Option B:	b) Decreasing
Option C:	c) Increasing
Option D:	d) As low as possible or As high as possible
Q5.	For the given parity check digits C1, C2& C3 calculate parity matrix. C3= d1⊕d2⊕d3 C2=d1⊕d2 & C1=d1⊕d3
Option A:	101 010 001
Option B:	111 110

	101
Option C:	111 001 010
Option D:	101 101 110
Q6.	Given below is a parity check matrix of a linear block code H= 1 1 1 1 1 1 1 1 0 1 1 0 0 1 1 0 0 1 0 1 0 0 0 0 This corresponds to a
Option A:	(6,3) linear block code
Option B:	(6,4) linear block code
Option C:	(6,2) linear block code
Option D:	(4,6) linear block code
Q7.	A binary cyclic code follows---------- and ---------- properties.
Option A:	Associative, cumulative
Option B:	Associative, linearity
Option C:	Linearity, distributive
Option D:	Linearity, cyclic
Q8.	For these two codes find hamming distance. C1= 101011 & C2= 100101
Option A:	2
Option B:	3
Option C:	4
Option D:	1
Q9.	When Syndrome Vector S=0, then received code is:
Option A:	With Error
Option B:	Without Error
Option C:	With 1 bit error
Option D:	With 2 bit error
Q10.	To generate the QPSK signal, the incoming binary data stream is first converted into polar form by a _____ level encoder.
Option A:	non-return-to-zero
Option B:	return-to-zero
Option C:	Split phase
Option D:	M-ary
Q11.	In DPSK an incoming information bit is _____ed with the preceding bit prior to entering the BPSK modulator

Option A:	AND
Option B:	XNOR
Option C:	OR
Option D:	XOR
Q12.	Range of time difference of the zero crossing gives the value of
Option A:	Width
Option B:	Distortion
Option C:	Timing jitter
Option D:	Noise margin
Q13.	The process of converting coded output into electrical pulses or waveforms for transmission is called
Option A:	Line coding
Option B:	Amplitude modulation
Option C:	FSK
Option D:	Filtering
Q14.	Which of the following technique is also known as On-Off Keying
Option A:	BPSK
Option B:	FSK
Option C:	DPSK
Option D:	ASK
Q15.	The process of equalization is said to be adaptive when
Option A:	Equalizer adjusts itself by operating on the input signal
Option B:	Equalizer output is not affected by changes in input signal.
Option C:	Equalizer output reduces by increase in input signal.
Option D:	Equalizer output increases by reduction in input signal.
Q16.	The output signal Xo(t) of a matched filter is praportional to the shifted version of the _____ function of the input signal X(t) to which the filter is matched.
Option A:	Covariance
Option B:	Cross corelation
Option C:	Standard deviation
Option D:	Autocorelation
Q17.	M-ary PSK is described in geometric terms by a constellation of M signal points distributed uniformly on a circle of radius_____
Option A:	$\sqrt{E}$
Option B:	$1/\sqrt{E}$
Option C:	E
Option D:	E^2

Q18.	Inter symbol interference can be avoided by transmitting_____ pulse instead of rectangle pulse.
Option A:	Cosine pulse
Option B:	Sinc pulse
Option C:	Sine pulse
Option D:	Spike pulse
Q19.	Two dice are thrown find the probability that sum on dice is six.
Option A:	1/36
Option B:	15/36
Option C:	6/36
Option D:	5/36
Q20.	What will be the Covariance of two independent events?
Option A:	1
Option B:	2
Option C:	-1
Option D:	0
Q21.	The output signal to noise ratio of a matched filter depends only on the ratio of the signal energy to the_____ of the white noise at the filter input.
Option A:	PDF
Option B:	CDF
Option C:	Mean
Option D:	Power spectral density
Q22.	Why noise is called as white noise?
Option A:	Because it contains all frequency components in equal proportion
Option B:	Because it contains frequency component of white light
Option C:	Because noise looks like white light
Option D:	Because it contain properties of white light
Q23.	We resort to the use of non coherent detection because:
Option A:	Coherent technique is very easy
Option B:	It is either impractical or too expensive to phase-synchronize a receiver to its transmitter.
Option C:	Non-coherent technique is complex
Option D:	It is either impractical to amplitude -synchronize a receiver to its transmitter
Q24.	If discrete signal is transmitted over a band limited channel , then it's get spread out and overlap each other to cause distortion called as_____
Option A:	Noise
Option B:	Extra added signal
Option C:	Inter symbol interference

Option D:	Newly generated signal
Q25.	The _____ is produced by the synchronized superposition of (as many as possible) successive symbol intervals of the distorted waveform appearing at the output of the receive-filter prior to thresholding.
Option A:	ISI
Option B:	Eye Pattern
Option C:	Baseband modulation
Option D:	Band pass