

**University of Mumbai**  
**Examination 2020 under cluster 5 (APSIT)**

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: ETC601 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 capacity relationship is given by
Option A:	$C = W \log_2 (1+S/N)$
Option B:	$C = 2W \log_2 (1+S/N)$
Option C:	$C = W \log_2 (1-S/N)$
Option D:	$C = W \log_2 (1+S/N)$
Q2.	The method in which the tail of one pulse smears into adjacent symbol interval is called as
Option A:	Inter symbol interference
Option B:	Interbit interference
Option C:	Inter channel interference
Option D:	Inter frequency interference
Q3.	In mathematical operation of Matched filter, signal is convolved with _____ response of filter.
Option A:	impulse
Option B:	ramp
Option C:	unit
Option D:	steady state
Q4.	QPSK is a modulation scheme where each symbol consists of
Option A:	4 bits
Option B:	2 bits
Option C:	1 bits
Option D:	M number of bits, depending upon the requirement
Q5.	In M-ary PSK, as the distance between two bits in a symbol increases, the probability of error
Option A:	increases
Option B:	decreases
Option C:	remain same
Option D:	exponentially increases

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Q6.	For a systematic linear block code of (7,4) the message bits and parity bits respectively are
Option A:	7,4
Option B:	4,7
Option C:	4,3
Option D:	3,4
Q7.	Which of the following codeword is having even parity
Option A:	0110010
Option B:	1001001
Option C:	1101110
Option D:	0011011
Q8.	The frequency hopping system uses _____ modulation scheme.
Option A:	FSK
Option B:	BPSK
Option C:	MFSK
Option D:	MPSK
Q9.	The channel encoder adds some redundant bits to the transmitted data for
Option A:	padding
Option B:	error correction
Option C:	adding error
Option D:	increasing BW
Q10.	An effective way to study the effects of ISI is the
Option A:	Eye pattern
Option B:	Equalizer
Option C:	Filter
Option D:	smith chart
Q11.	Matched filters cannot be used for
Option A:	To estimate the frequency of the received signal
Option B:	In parameter estimation problems
Option C:	To estimate the distance of the object
Option D:	increasing the gain
Q12.	In which system, bit stream is partitioned into even and odd streams?
Option A:	BPSK
Option B:	MSK
Option C:	QPSK
Option D:	FSK
Q13.	The constellation diagram of QPSK has _____ dots.
Option A:	1

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Option B:	2
Option C:	4
Option D:	8
Q14.	Cyclic property states that when a codeword is rotated
Option A:	error is generated
Option B:	another codeword is generated
Option C:	parity is generated
Option D:	message is generated
Q15.	The hamming distance between 00110 and 10111 is
Option A:	2
Option B:	3
Option C:	1
Option D:	0
Q16.	The two techniques of spreading the bandwidth are
Option A:	FHSS & TDM
Option B:	DSSS & FDM
Option C:	FHSS & DSSS
Option D:	DSSS & FDM
Q17.	The _____ represents the maximum amount of information that can be transmitted by a channel per second.
Option A:	channel rate
Option B:	channel capacity
Option C:	channel length
Option D:	channel frequency
Q18.	In eye –pattern, the width of the eye opening defines the interval over which the received wave can be sampled without error from _____
Option A:	noise
Option B:	white noise
Option C:	jitter
Option D:	intersymbol interference
Q19.	_____ is used to maximize Signal to noise ratio even for non -Gaussian noise.
Option A:	Optimum filter
Option B:	Matched Filter
Option C:	Coherent receiver
Option D:	Baseband receiver
Q20.	Bandwidth of QPSK is _____ as compared to that of BPSK.
Option A:	Double
Option B:	Same

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Option C:	Thrice
Option D:	Half
Q21.	MSK exhibits a _____ continuity.
Option A:	Amplitude
Option B:	Phase
Option C:	Frequency
Option D:	Noise
Q22.	For (n, k) block codes, rate of the code is defined as _____
Option A:	n/k
Option B:	k/n
Option C:	k+n
Option D:	n-k
Q23.	The Hamming distance between 100 and 001 is _____.
Option A:	3
Option B:	1
Option C:	2
Option D:	0
Q24.	PN sequence can be generated using _____ circuits.
Option A:	sequential logic
Option B:	multiplexer
Option C:	transistor
Option D:	feedback
Q25.	The modulation most affected by noise is
Option A:	ASK
Option B:	PSK
Option C:	FSK
Option D:	QAM