

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E/ECE	Year / Semester : III / V	Format No.	NAC/TLP-07a.13
Subject Code : EC8501	Subject Name : Digital Communication	Rev. No.	02
Unit No : 5	Unit Name : Error Control Coding	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1	Parity bit coding may not be used for a. Error in more than single bit b. Which bit is in error c. Both a & b d. None of the above	L2
2	Parity check bit coding is used for a. Error correction b. Error detection c. Error correction and detection d. None of the above	L2
3	For hamming distance d_{min} and t errors in the received word, the condition to be able to correct the errors is a. $2t + 1 \leq d_{min}$ b. $2t + 2 \leq d_{min}$ c. $2t + 1 \leq 2d_{min}$ d. Both a and b	L4
4	For hamming distance d_{min} and number of errors D , the condition for receiving invalid codeword is a. $D \leq d_{min} + 1$ b. $D \leq d_{min} - 1$ c. $D \leq 1 - d_{min}$ d. $D \leq d_{min}$	L5
5	The minimum distance for unextended Golay code is a. 8 b. 9 c. 7 d. 6	L1
6	The Golay code (23,12) is a codeword of length 23 which may correct a. 2 errors b. 3 errors c. 5 errors d. 8 errors	L1
7	Orthogonality of two codes means a. The integrated product of two different code words is zero b. The integrated product of two different code words is one c. The integrated product of two same code words is zero	L2

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	d. None of the above	
8	<p>Hamming distance can be given by the number of elements in which</p> <p>a) They are same b) They differ c) Which are non zero d) None of the mentioned</p>	L1
9	<p>Code strength is characterized by its</p> <p>a) Minimum distance b) Maximum distance c) Code weight d) Code size</p>	L1
10	<p>The distance between two code-words is equal to the _____ of the third code-word which is the sum of the first two code-words.</p> <p>a) Size b) Weight c) Minimum distance d) None of the mentioned</p>	L3
11	<p>The minimum distance D_{min} can also be given as</p> <p>a) $D_{min} \geq + + 1$ b) $D_{min} \leq + + 1$ c) $D_{min} \geq + - 1$ d) $D_{min} \leq + + 1$</p>	L2
12	<p>The number of errors that can be corrected without erasure information is</p> <p>a) $D_{min}+1$ b) $D_{min} - 1$ c) $(D_{min}+1)/2$ d) $(D_{min} - 1)/2$</p>	L3
13	<p>Channel coding relates to area such as</p> <p>a) Waveform coding b) Structured sequence c) Waveform coding & Structured sequence d) None of the mentioned</p>	L1

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14	<p>The ratio of redundant bits to data bits is called as</p> <p>a) Code rate b) Redundancy rate c) Symbol rate d) Transmission rate</p>	L1
15	<p>If the parity bit takes value one then the summation of code-word gives</p> <p>a) Even result b) Odd result c) Even & Odd result d) None of the mentioned</p>	L2
16	<p>The probability of message error is written as</p> <p>a) Block error b) Word error c) Block & Word error d) None of the mentioned</p>	L3
17	<p>The cyclic codes are designed using</p> <p>a) Shift registers with feedback b) Shift registers without feedback c) Flipflops d) None of the mentioned</p>	L1
18	<p>A cyclic code can be generated using</p> <p>a) Generator polynomial b) Generator matrix c) Generator polynomial & matrix d) None of the mentioned</p>	L5
19	<p>The received code contains an error if the syndrome vector is</p> <p>a) Zero b) Non zero c) Infinity d) None of the mentioned</p>	L1
20	<p>The measure of the amount of redundancy is given by</p> <p>a) Code size b) Code weight c) Code rate d) Minimum distance</p>	L1

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21	<p>The number of k bit shift over which a single information bit influences the encoder output is given by</p> <p>a) Code rate b) Constraint length c) Code length d) Code weight</p>	L2
22	<p>The method used for representing convolution encoder are</p> <p>a) Connection pictorial b) State diagram c) Tree diagram d) All of the mentioned</p>	L3
23	<p>Example for convolution encoder state diagram is</p> <p>a) Tree diagram b) Trellis diagram c) Tree & Trellis diagram d) None of the mentioned</p>	L1
24	<p>In maximum likelihood decoding technique, the likelihood function compares the</p> <p>a) Joint probabilities b) Individual probabilities c) Conditional probabilities d) None of the mentioned</p>	L5
25	<p>In maximum likelihood detector the error probability is</p> <p>a) Maximum b) Minimum c) Zero d) None of the mentioned</p>	L3
26	<p>Which distance is related to the error correcting capability of the code?</p> <p>a) Maximum distance b) Minimum distance c) Maximum & Minimum distance d) None of the mentioned</p>	L1
27	<p>A catastrophic error is an event whereby _____ number of code symbol error causes</p>	L2

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	<p>_____ number of decoded data error bits.</p> <p>a) Finite, finite b) Finite, infinite c) Infinite, finite d) Infinite, infinite</p>	
28	<p>The error correcting capability of a code scheme increases as the</p> <p>a) Number of channel symbols per information bit increases b) Bandwidth increases c) Information per bit increases d) All of the mentioned</p>	L1
29	<p>The look ahead length L is given by</p> <p>a) m+1 b) m-1 c) (m+1)/2 d) 1-m</p>	L1
30	<p>The minimum distance for Reed Solomon code is given by</p> <p>a) n+k+1 b) n-k+1 c) 1-n-k d) 1+n-k</p>	L3
31	<p>Greater the redundancy greater will be the error correcting capability.</p> <p>a) True b) False</p>	L3