All the Multiple Choice Question and Answer (MCQs) have been compiled from the books of Data Communication and Networking by The well known author behrouz A forouzan.

This Data Communication and Networking – **Error Detection and Correction** multiple choice (MCQ) based Questions and Answers PDF cover the below lists of topics.

1. Single-bit error or a burst error Multiple Choice Question and Answer.
2. Redundancy methods, parity check, cyclic redundancy checks (CRC), and checksum Multiple Choice Question and Answer.
3. Hamming code Multiple Choice Question and Answer.

Practice now to sharpen your concept.

1. Which error detection method uses one's complement arithmetic?

A. Simple parity check
B. Two-dimensional parity check
C. CRC
D. Checksum

2. Which error detection method consists of just one redundant bit per data unit?

A. Simple parity check
B. Two-dimensional parity check
C. CRC
D. Checksum

3. In cyclic redundancy checking, what is the CRC?

A. The divisor
B. The quotient
C. The dividend
D. The remainder

4. In cyclic redundancy checking, the divisor is _____ the CRC

A. The same size as
B. one bit less than
C. one bit more than
D. none of the above

5. A burst error means that two or more bits in the data unit have changed.

A. double-bit
B. burst
C. single-bit
D. none of the above

6. In _____ error correction, the receiver corrects errors without requesting retransmission.

A. backward
B. onward
C. forward
D. none of the above

7. In _____ error correction, the receiver asks the sender to send the data again.

A. backward
B. retransmission
C. forward

D. none of the above

8. We can divide coding schemes into two broad categories: _____ and _____coding.

A. block; linear
B. linear; nonlinear
C. block; convolution
D. none of the above

9. In modulo-2 arithmetic, _____ give the same results.

A. addition and multiplication
B. addition and division
C. addition and subtraction
D. none of the above

10. In modulo-2 arithmetic, we use the _____ operation for both addition and subtraction.

A. XOR
B. OR
C. AND
D. none of the above

Answer key for MCQ SET- 1	
Q-1	Correct Answer :Checksum
Q-2	Correct Answer :Simple parity check
Q-3	Correct Answer :The remainder
Q-4	Correct Answer :one bit more than
Q-5	Correct Answer :burst
Q-6	Correct Answer :forward

Q-7	Correct Answer :retransmission
Q-8	Correct Answer :block; convolution
Q-9	Correct Answer :addition and subtraction
Q-10	Correct Answer :XOR

Error Detection and Correction multiple choice questions and answers MCQ Set-2

1. In _____ coding, we divide our message into blocks, each of k bits, called ___.

A. block; blockwords
B. linear; datawords
C. block; datawords
D. none of the above

2. We add r redundant bits to each block to make the length n = k + r. The resulting n-bit blocks are called _____

A. datawords
B. blockwords
C. codewords
D. none of the above

3. The _____ between two words is the number of differences between corresponding bits

A. Hamming code
B. Hamming distance
C. Hamming rule
D. none of the above

4. To guarantee the detection of up to 5 errors in all cases, the minimum Hamming distance in a block code must be _____

A. 5
B. 6
C. 11
D. none of the above

5. To guarantee correction of up to 5 errors in all cases, the minimum Hamming distance in a block code must be _____

A. 5
B. 6
C. 11
D. none of the above

6. In a linear block code, the _____ of any two valid codewords creates another valid codeword

A. XORing
B. ORing
C. ANDing
D. none of the above

7. A simple parity-check code can detect _____ errors

A. an even-number of
B. two
C. no errors
D. an odd-number of

8. _____codes are special linear block codes with one extra property. If a codeword is rotated, the result is another codeword

A. Non-linear
B. Convolution
C. Cyclic
D. none of the above

9. The _____of errors is more difficult than the _____

A. correction; detection
B. detection; correction
C. creation; correction
D. creation; detection

10. In modulo-11 arithmetic, we use only the integers in the range _____, inclusive

A. 1 to 10
B. 1 to 11
C. 0 to 10
D. none of the above

Answer key for MCQ SET- 2	
Q-1	Correct Answer :block; datawords
Q-2	Correct Answer :codewords
Q-3	Correct Answer :Hamming distance
Q-4	Correct Answer :6
Q-5	Correct Answer :11
Q-6	Correct Answer :XORing
Q-7	Correct Answer :an odd-number of
Q-8	Correct Answer :Cyclic

Q-9	Correct Answer :correction; detection
Q-10	Correct Answer :0 to 10

Error Detection and Correction multiple choice questions and answers MCQ Set-3

1. In modulo-2 arithmetic, we use only _____

A. 1 and 2
B. 0 and 2
C. 0 and 1
D. none of the above

2. Adding 1 and 1 in modulo-2 arithmetic results in _____

A. 1
B. 2
C. 0
D. none of the above

3. In block coding, if k =2 and n =3, we have _____ invalid codewords

A. 8
B. 4
C. 2
D. none of the above

4. The Hamming distance between equal codewords is _____

A. 1
B. n

C. 0
D. none of the above

5. The Hamming distance between 100 and 001 is _____

A. 2
B. 0
C. 1
D. none of the above

6. In block coding, if n = 5, the maximum Hamming distance between two codewords is _____

A. 2
B. 3
C. 5
D. none of the above

7. If the Hamming distance between a dataword and the corresponding codeword is three, there are _____ bits in error.

A. 3
B. 4
C. 5
D. none of the above

8. The _____ of a polynomial is the highest power in the polynomial

A. range
B. degree
C. power
D. none of the above

9. The divisor in a cyclic code is normally called the _____

A. degree
B. generator
C. redundancy
D. none of the above

10. A generator that contains a factor of ____ can detect all odd-numbered errors.

A. x
B. x + 1
C. 1
D. none of the above

Answer key for MCQ SET- 3	
Q-1	Correct Answer :0 and 1
Q-2	Correct Answer :0
Q-3	Correct Answer :4
Q-4	Correct Answer :0
Q-5	Correct Answer :2
Q-6	Correct Answer :5
Q-7	Correct Answer :3
Q-8	Correct Answer :degree
Q-9	Correct Answer :generator
Q-10	Correct Answer :x + 1