

## Unit 2/Chapter – Data Link Layer And Medium Access Sub Layer

### Multiple Choice Questions:

1. In the sliding window method of flow control, the receiver window.....size when an ACK is sent
  - A. increases in
  - B. decreases in
  - C. doubles in
  - D. remains its original
2. In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence numbers?
  - A.0 to 63
  - B.0 to 64
  - C.1 to 63
  - D.1 to 64
3. ARQ stands for .....
  - A. Automatic repeat Quantization
  - B. Automatic repeat request
  - C. Automatic retransmission request
  - D. Acknowledge repeat request
4. In Go-Back-N ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the receive window must be \_\_\_\_\_.
  - A.1
  - B.15
  - C.16
  - D.31
5. In Selective Repeat ARQ, if 5 is the number of bits for the sequence number, then the maximum size of the receive window must be \_\_\_\_\_.
  - A.1
  - B.15
  - C.16
  - D.31
6. The range of the possible sequence numbers of Go-Back-N Protocol which is the concern of the receiver is called the
  - A. sender sliding window
  - B. pipeling at the sender
  - C. pipeling at the receiver
  - D. receiver sliding window
7. The \_\_\_\_\_Protocol has both flow control and error control.
  - A. Stop-and-Wait
  - B. Selective-Repeat ARQ
  - C. Go-Back-N ARQ
  - D. both (b) and (c)
8. In ....., the chance of collision can be reduced if a station senses the



medium before trying to use it.

- A. MA
- C. FDMA

- B. CSMA
- D. CDMA

9. .... requires that each station first listen to the medium before sending.

- A. MA
- C. FDMA

- B. CSMA
- D. CDMA

10. In ....., a station monitors the medium after it sends a frame to see if the transmission was successful. If so, the station is finished. If, however, there is a collision, the frame is sent again.

- A. CSMA/CA
- C. Either (a) or (b)

- B. CSMA/CD
- D. Both (a) and (b)

11. In ..... each station sends frame whenever it has a frame to send.

- A. pure ALOHA
- C. both (a) and (b)

- B. slotted ALOHA
- D. neither (a) nor (b)

12. In slotted ALOHA, the vulnerable time is ..... the frame transmission time.

- A. the same as
- C. three times

- B. two times
- D. none of the above

13. The vulnerable time for CSMA is the ..... propagation time.

- A. the same as
- C. three times

- B. two times
- D. none of the above

### Fill in the Blanks

1. The data link layer needs to pack \_\_\_\_\_ into \_\_\_\_\_.
2. At data Link Layer, two types of protocols are used 1. \_\_\_\_\_ 2. \_\_\_\_\_ oriented protocol
3. No of Bits in MAC address \_\_\_\_\_
4. The Frame \_\_\_\_\_ consist of source and destination MAC address and control information regarding flow control.
5. The Frame \_\_\_\_\_ consist of error detecting and error correcting codes to ensure correct delivery of data to next node
6. .... augments the CSMA algorithm to detect collision.
7. To avoid collisions on wireless networks, ..... was invented.
8. In pure ALOHA, the vulnerable time is ..... the frame transmission time.
9. Both Go-Back-N and Selective-Repeat Protocols use a \_\_\_\_\_.
10. .... Control refers to methods of error detection and correction.

### Short Questions

1. What is the function of data link layer?  
Keywords: Framing.
2. What is Byte oriented and Bit stuffing?  
Keywords: Using ASCII CODE and avoid conflicts.
3. Which are different types of error during data transmission?

Keywords: single-bit error, Burst error

4. What is Redundancy?

Keywords: Pure ALOHA, Slotted ALOHA, CSMA/CD, CSMA/CA

### Long Questions

1. What are different Framing Methods?  
Keywords: Character Oriented, Character stuffing
2. Explain the error control and flow control.  
Keywords: Block coding, Parity checking
3. Explain CRC with example.  
Keywords: Cyclic Redundancy Check and Example
4. Explain noiseless channel protocol in brief.  
Keywords: Simplex protocol, stop and wait
5. Explain Sliding Window Protocol.  
Keywords: Go Back N ARQ, Selective Repeat ARQ etc.
6. List out Multiple access protocol and discuss any one multiple access protocol in detail.  
a. Keywords: Pure ALOHA, Slotted ALOHA, CSMA/CD, CSMA/CA etc.